Access DB# 115597

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Amanda Walke Examiner #: 75663 Date: 2/26/2004
Art Unit: 1752 Phone Number 30 21337 Serial Number: 10/091373
Mail Box and Bldg/Room Location: RCH 9D64 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Bio Sheet Attached

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Please search from the polymer of claim 1 (attached).

Thank you.

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable
Searcher:	NA Sequence (#)		STN
Searcher Phone #:	AA Sequence (#)		Dialog
Searcher Location:	Structure (#)		Questel/Orbit
Date Searcher Picked Up:	Bibliographic		Dr.Link
Date Completed:	Litigation		Lexis/Nexis
Searcher Prep & Review Time:	Fulltext		Sequence Systems
Clerical Prep Time:	Patent Family		WWW/Internet
Online Time:	Other		Other (specify)

PTO-1590 (8-01)

STIC Search Report
EIC 1700

STIC Database Tracking Number: 115597

TO: Amanda Walke
Location: 9D64
Art Unit : 1752
March 4, 2004

Case Serial Number: 10/091373

From: Barba Koroma
Location: EIC 1700
REM EO4 A30
Phone: 571 272 2546

barba.koroma@uspto.gov

Search Notes

Examiner Walke,
Please find attached results of the search you requested. Various components of the claimed invention as spelt out in the claims and search request form were searched in REGISTRY and CAPLUS databases.

For your convenience, titles of hits have been listed to help you peruse the results set quickly. This is followed by a detailed printout of records. Please let me know if you have any questions.
Thanks.

STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact:***

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

=> file reg
FILE 'REGISTRY' ENTERED AT 10:57:06 ON 04 MAR 2004

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 3 MAR 2004 HIGHEST RN 658036-92-1
DICTIONARY FILE UPDATES: 3 MAR 2004 HIGHEST RN 658036-92-1

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

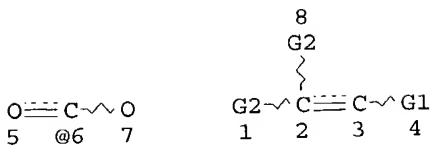
Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> file caplus
FILE 'CAPLUS' ENTERED AT 10:57:10 ON 04 MAR 2004

FILE COVERS 1907 - 4 Mar 2004 VOL 140 ISS 10
FILE LAST UPDATED: 3 Mar 2004 (20040303/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

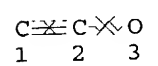
=> d que
L1 STR



VAR G1=CN/6
VAR G2=H/F
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
L2 STR



NODE ATTRIBUTES:
NSPEC IS RC AT 1
NSPEC IS RC AT 2
NSPEC IS RC AT 3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L3		SCR 2043
L4	64646	SEA FILE=REGISTRY SSS FUL L1 AND L2 AND L3
L5	49144	SEA FILE=CAPLUS ABB=ON PLU=ON L4
L15	14695	SEA FILE=CAPLUS ABB=ON PLU=ON L5(L)COPOLYMER
L17	479	SEA FILE=CAPLUS ABB=ON PLU=ON L15 AND PHOTORESISTS
L19	376	SEA FILE=CAPLUS ABB=ON PLU=ON L17 AND (PREP OR SPN OR IMF)/RL
L20	100	SEA FILE=CAPLUS ABB=ON PLU=ON L19 AND CHEMICAL?(4A)AMPLIF?
L22	76	SEA FILE=CAPLUS ABB=ON PLU=ON L20 AND RESIST?
L24	76	SEA FILE=CAPLUS ABB=ON PLU=ON L22 AND (PREP OR SPN OR IMF OR USE)/RL
L25	76	SEA FILE=CAPLUS ABB=ON PLU=ON L24 AND COPOLYMER?
L26	58	SEA FILE=CAPLUS ABB=ON PLU=ON L25 AND ACRYL?

=> d ti 1-58

KOROMA EIC1700

L26 ANSWER 1 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive resin compositions for **chemically amplified resists**

L26 ANSWER 2 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Photoacid generators for **chemically amplified resists** and their use in **resists** and pattern formation

L26 ANSWER 3 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI N-sulfonyloxydicarboxyimides as photoacid generators for **chemically amplified resists** and patterning method

L26 ANSWER 4 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Novel sulfonyldiazomethanes, photoacid generators, **resist** compositions, and patterning process

L26 ANSWER 5 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Photoacid generators and **chemically amplified resist** compositions for patterning process

L26 ANSWER 6 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Copolymer** for use in **chemical amplification resists**

L26 ANSWER 7 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Anthracene derivative and radiation-sensitive resin composition

L26 ANSWER 8 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Copolymer**, polymer mixture, and radiation-sensitive resin composition

L26 ANSWER 9 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Negative **resist** materials and their patterning with high-energy ray or electron beam

L26 ANSWER 10 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically amplified** positive **resist** compositions with suppressed variation in line width on on high-reflection substrates

L26 ANSWER 11 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically amplified** positive **resist** compositions having decreased variation in line width and good performances on uneven-surfaced substrates

L26 ANSWER 12 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive radiation-sensitive compositions having high sensitivity and high resolution

L26 ANSWER 13 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN

TI Electron beam and UV lithographic pattern formation method using **chemically-amplified resist**

L26 ANSWER 14 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically-amplified** negative-working **resist** compositions for processing with electron beam or x-ray

L26 ANSWER 15 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically-amplified** negative-working **resist** compositions for processing with electron beam or x-ray

L26 ANSWER 16 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Alkenylphenol-based **copolymers** bearing acid-sensitive segments and selectively protected hydroxy-containing segments for **chemically amplified resists** and their preparation

L26 ANSWER 17 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Synergic effect of acetal-based resin by blending with poly[4-hydroxystyrene-co-tert-butyl **acrylate**-co-4-(3-cyano-1,5-di-tert-butyl carbonylpentylstyrene (P(HS-TBA-CBPS)) on the profiles of 248 nm **chemically amplified resist**

L26 ANSWER 18 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive **resist** for KrF excimer laser lithography

L26 ANSWER 19 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Carbazole derivative and **chemically amplified** radiation-sensitive resin composition

L26 ANSWER 20 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Non-**chemically amplified** water and aqueous base developable negative photoresist

L26 ANSWER 21 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI High-performance **resist** materials for ArF excimer laser and electron-beam lithography

L26 ANSWER 22 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Polymers and their use in **resists** and pattern formation

L26 ANSWER 23 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positively working **resist** composition containing fluoropolymer for high resolution

L26 ANSWER 24 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive **chemically amplified** positive **resists** and lithography using the same

L26 ANSWER 25 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Resist** compositions comprising fluorinated vinyl phenol-**acrylonitrile** resin and patterning process

L26 ANSWER 26 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive-working **chemically amplified** photoresist materials containing polymer made of hydroxyvinylanthracene and monomer having modified carboxyl group

L26 ANSWER 27 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive-working **chemically amplified** photoresist materials containing polymer made of hydroxyvinylnaphthalene and of monomers having modified carboxyl group

L26 ANSWER 28 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Blends of hydroxystyrene polymers for use in **chemically amplified** positive **resist** formulations

L26 ANSWER 29 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Novel polymers and photoresist compositions comprising electronegative groups

L26 ANSWER 30 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically amplified** positive-working photoresist composition for fabrication of semiconductor devices such as super LSI

L26 ANSWER 31 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Styrene polymer having acid-sensitive dissociable organic groups for radiation-sensitive **chemically amplified** **resist** resin composition

L26 ANSWER 32 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemical amplifying** type positive **resist** composition and sulfonium salt

L26 ANSWER 33 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive **resist** composition and onium salts of saccharin derivatives

L26 ANSWER 34 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically amplified** positive **resist** compositions with improved resolution, pattern profile and focal latitude for deep UV lithography

L26 ANSWER 35 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically amplified** positive **resist** compositions with improved resolution, pattern profile and focal latitude for deep UV lithography

L26 ANSWER 36 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive resin composition

L26 ANSWER 37 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electron beam or x-ray negative-working **resist** composition

L26 ANSWER 38 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive **chemically amplified** **resist** composition containing **copolymer** of **acrylic** monomer and styrene derivative monomer

L26 ANSWER 39 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive **chemically amplified** **resist** composition containing specific **copolymer**

L26 ANSWER 40 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive resin composition comprising N-sulfonyloxyimide compound as an acid-generating agent for **chemically amplified resists**

L26 ANSWER 41 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Resist** resin for **chemically amplified** **resist** composition and method for pattern formation using same

L26 ANSWER 42 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI A **resist** composition

L26 ANSWER 43 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Oxime derivates and their use as photosensitive acid donors in **chemically amplified** photoresist compositions.

L26 ANSWER 44 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive **chemically amplified** positive-working **resist** resin composition

L26 ANSWER 45 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Hydroxystyrene **copolymers** and **photoresists** comprising same

L26 ANSWER 46 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically amplified** photoresist composition

L26 ANSWER 47 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Photosensitive polymer for **chemically amplified** **resists** and **chemically amplified** **resist** composition containing same

L26 ANSWER 48 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive composition for **chemically amplified** photoresist

L26 ANSWER 49 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Method using photoresist composition and articles produced therewith

L26 ANSWER 50 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Novel dissolution inhibitors based on calixarene derivatives for use in **chemical amplification resists**

L26 ANSWER 51 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive resin composition useful as **chemically amplified** positive-working **resist**

L26 ANSWER 52 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Composition for antireflection or light absorption film and compounds for use in same

L26 ANSWER 53 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemical amplification** and positive-working type **resist** laminate for manufacturing semiconductors and patterning using same

L26 ANSWER 54 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemical amplification**-type positive-working radiation-sensitive **resist** composition

L26 ANSWER 55 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Environmentally stable **chemically amplified** positive **resist** containing vinyllactam terpolymers

L26 ANSWER 56 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Chemically amplified resists** containing vinyllactam derivatives

L26 ANSWER 57 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Radiation-sensitive resin compositions for **chemically amplified resists**

L26 ANSWER 58 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
TI Manufacture of vinylphenol **copolymers** for **chemically amplified photoresists**

=> d ibib abs hitstr ind total

L26 ANSWER 1 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER:	2004:37343 CAPLUS
DOCUMENT NUMBER:	140:102031
TITLE:	Radiation-sensitive resin compositions for **chemically amplified resists**
INVENTOR(S):	Nagai, Tomoki; Miyaji, Masaaki
PATENT ASSIGNEE(S):	JSR Ltd., Japan
SOURCE:	Jpn. Kokai Tokkyo Koho, 35 pp. CODEN: JKXXAF
DOCUMENT TYPE:	Patent
LANGUAGE:	Japanese
FAMILY ACC. NUM. COUNT:	1

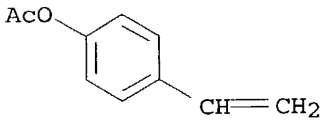
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 2004012798 A2 20040115 JP 2002-165978 20020606
PRIORITY APPLN. INFO.: JP 2002-165978 20020606
OTHER SOURCE(S): MARPAT 140:102031
AB The compns. contain R1OSO2R2 (R1 = monovalent acid-dissociation group; R2 = monovalent organic group), alkali-insol. resins capable to become alkali-soluble by acids, and radiation-sensitive acid generators. The compns. are suitable for KrF excimer laser, ArF excimer laser, F2 excimer layer, etc., and show high transparency to radiation and resolution
IT **221549-67-3DP**, p-Acetoxystyrene-tert-butyl **acrylate** -styrene **copolymer**, hydrolyzed
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive compns. containing sulfonates, alkali-insol. resins, and acid generators for **chemical amplified resists**)
RN 221549-67-3 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

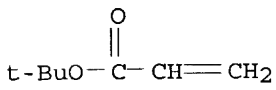
CM 1

CRN 2628-16-2
CMF C10 H10 O2



CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM G03F007-004
ICS C08F012-24; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37
ST radiation sensitive resin **chem amplified resist; resist** sulfonate alkali insol resin acid generator
IT **Photoresists**
(UV, far-UV; radiation-sensitive compns. containing sulfonates, alkali-insol. resins, and acid generators for **chemical amplified resists**)
IT **Resists**
(radiation-sensitive; radiation-sensitive compns. containing sulfonates, alkali-insol. resins, and acid generators for **chemical amplified resists**)
IT 84563-54-2, Bis(p-tert-butylphenyl)iodoniumtrifluoromethanesulfonate 133710-62-0 138529-81-4, Bis(cyclohexanesulfonyl)diazomethane
RL: CAT (Catalyst use); USES (Uses)
(acid generator; radiation-sensitive compns. containing sulfonates, alkali-insol. resins, and acid generators for **chemical amplified resists**)
IT 109-92-2DP, Ethyl vinyl ether, reaction products with butoxystyrene-hydroxystyrene **copolymer** 123589-22-0DP, p-tert-Butoxystyrene-p-hydroxystyrene **copolymer**, reaction products with Et vinyl ether **221549-67-3DP**, p-Acetoxystyrene-tert-butyl **acrylate** -styrene **copolymer**, hydrolyzed 406198-64-9DP, p-Acetoxystyrene-p-tert-butoxystyrene-styrene **copolymer**, hydrolyzed
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive compns. containing sulfonates, alkali-insol. resins, and acid generators for **chemical amplified resists**)
IT 115726-23-3
RL: MOA (Modifier or additive use); USES (Uses)
(radiation-sensitive compns. containing sulfonates, alkali-insol. resins, and acid generators for **chemical amplified resists**)

L26 ANSWER 2 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:20123 CAPLUS
DOCUMENT NUMBER: 140:102018
TITLE: Photoacid generators for **chemically amplified resists** and their use in **resists** and pattern formation
INVENTOR(S): Osawa, Yoichi; Kobayashi, Katsuhiro; Takemura, Katsuya; Tsuchiya, Junji; Maeda, Kazuki

PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 76 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004004551	A2	20040108	JP 2003-27861	20030205

PRIORITY APPLN. INFO.: JP 2002-80566 A 20020322
OTHER SOURCE(S): MARPAT 140:102018
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

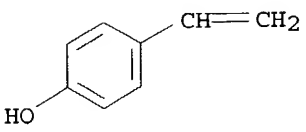
AB The photoacid generators are represented by I, pC(EWG):NOSO2C6H4-rR'rOn(CH2)mMe, q[C(EWG):NOSO2C6H4-rR'rOn(CH2)mMe]2, or II [R' = H, F, C1-4 alkyl, alkoxy; R = Cl, R'; n = 0, 1; m =3-11; r = 0-4; EWG = cyano, nitro, C1-3 perfluoroalkyl; p = C1-10 alkyl, C6-12 aryl; q = C1-10 alkylene, C6-18 arylene; G', G'' = S, CH:CH; G' and G'' are not S at the same time; G = H, p; two G may form ring]. Alternatively, the photoacid generators are O-arylsulfonyloximes and generate long-chain alkylbenzenesulfonic acids or alkoxybenzenesulfonic acids of HO3SC6H4-rR'rOn(CH2)mMe (R', n, m, and r are same as above) under irradiation with UV, far-UV, electron beam, x-ray, excimer laser, γ-ray, or synchrotron radiation. The claimed **chemical amplified** (pos.) **resists** contain the above photoacid generators and resins changing solubility to alkali development solns. by acids. Patterns are formed by applying the **resists** on substrates, heating, exposing through photomasks by ≤300 nm-wavelength high-energy beams or electron beams, optionally heating, and developing with solns.

IT **159296-87-4**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer 326925-68-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene **copolymer 345580-95-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene-styrene **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(**resists** containing; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

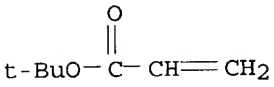
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

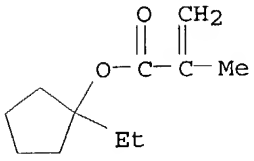
CRN 1663-39-4
CMF C7 H12 O2



RN 326925-68-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

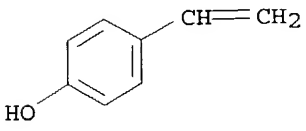
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O

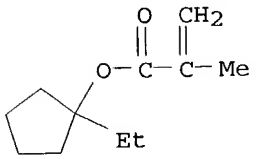


RN 345580-95-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with

ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

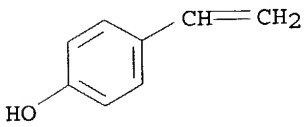
CM 1

CRN 266308-58-1
CMF C11 H18 O2



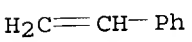
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 100-42-5
CMF C8 H8



IC ICM G03F007-004
ICS C09K003-00; G03F007-039; H01L021-027; H01L021-30
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 25, 37
ST arylsulfonyloxime photoacid generator **resist** pattern formation
IT Photolithography
Photoresists
(UV; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)
IT Electron beam lithography
Electron beam **resists**
Negative **photoresists**

KOROMA EIC1700

Positive **photoresists**
X-ray lithography
X-ray **resists**
(photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT **Resists**
(pos.-working; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 1132-66-7P, Hexyloxybenzene 1145-45-5P 80227-88-9P 110490-51-2P, 1-n-Hexyloxy-2-isopropyl-5-methylbenzene 642460-59-1P 642460-60-4P
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(photoacid generator from; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 89-83-8, Thymol 95-45-4, Dimethylglyoxime 98-68-0, 4-Methoxybenzenesulfonyl chloride 108-95-2, Phenol, reactions 111-25-1, n-Hexylbromide 576-26-1, 2,6-Xylenol 4552-50-5 7790-94-5, Chlorosulfonic acid 267420-08-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoacid generator from; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 39153-56-5, Bis(2,4-dimethylphenylsulfonyl)diazomethane 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 195723-94-5, (4-tert-Butoxyphenyl)diphenylsulfonium 10-camphor-sulfonate
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 219651-38-4P 219651-50-0P 642460-61-5P 642460-62-6P 642460-63-7P 642460-64-8P
RL: CAT (Catalyst use); **IMF (Industrial manufacture)**; **SPN (Synthetic preparation)**; **PREP (Preparation)**; USES (Uses)
(photoacid generator; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 95-87-4, 2,5-Xylenol 825-52-5, 2-Hydroxyimino-2-phenylacetonitrile 2189-60-8, Octylbenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 54997-91-0P, 4-Octylbenzenesulfonyl chloride 642460-71-7P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 642460-65-9P 642460-66-0P 642460-67-1P 642460-68-2P 642460-69-3P
642460-70-6P 642460-72-8P
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**
(photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 102-82-9, Tributylamine 3235-51-6, Tris(2-methoxyethyl)amine
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(**resists** containing; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 69-72-7, Salicylic acid, uses 126-00-1, 4,4-Bis(4-hydroxyphenyl)valeric acid 24979-70-2D, p-Hydroxystyrene homopolymer, acetyl, buthoxycarbonyl, or ethoxyethyl derivs. 71545-61-4D, polymers with polyhydroxystyrene ethoxyethyl derivs. **159296-87-4**, tert-Butyl **acrylate** -p-hydroxystyrene **copolymer 326925-68-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene **copolymer 345580-95-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene-styrene **copolymer** 552840-49-0 552840-50-3 552840-52-5D, Indene-p-hydroxystyrene **copolymer**, butoxycarbonyl derivs. 552840-54-7
RL: TEM (Technical or engineered material use); USES (Uses)
(**resists** containing; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

IT 97-64-3, Ethyl lactate 84540-57-8, Propyleneglycol methyl ether acetate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent, **resists** containing; photoacid generators for **chemical amplified resists** and pattern formation with high-energy beams or electron beams)

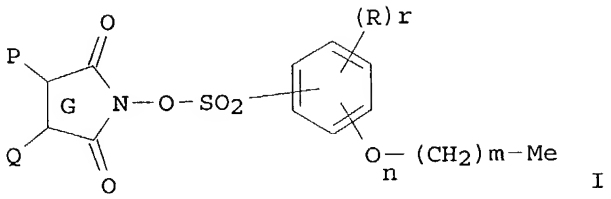
L26 ANSWER 3 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:19898 CAPLUS
DOCUMENT NUMBER: 140:84638
TITLE: N-sulfonyloxydicarboxyimides as photoacid generators for **chemically amplified resists** and patterning method
INVENTOR(S): Osawa, Yoichi; Kobayashi, Katsuhiro; Maeda, Kazunori; Miyakoshi, Hiroshi; Tanaka, Yoshio
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 58 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004002291	A2	20040108	JP 2002-364156	20021216

PRIORITY APPLN. INFO.: JP 2001-393187 A 20011226

OTHER SOURCE(S): MARPAT 140:84638

GI



I

AB The N-sulfonyloxydicarboxyimides are I (R = H, F, C1-4 (cyclo)alkyl, C1-4 alkoxy; G = single bond, double bond, P, Q = H, C1-10 alkyl; P and Q may form alycyclic or heterocyclic structures or aromatic ring; m = 3-11; n = 0, 1; r = 0-4). The **resists** contain polymers changing alkali solubility by acid action and the N-sulfonyloxydicarboxyimides generating acids by radiation irradiation The **resists** are patternwise exposed with radiation at ≤300 nm or electron beam via photomasks. The **resists** remain no foreign substances on developping and stripping.

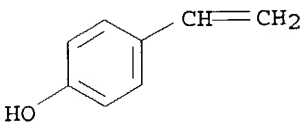
IT **159296-87-4**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer** **326925-68-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene **copolymer** **345580-95-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene-styrene **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(N-sulfonyloxydicarboxyimides as photoacid generators for far-UV or electron beam **resists** remaining no foreign substances on stripping)

RN 159296-87-4 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

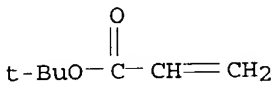
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

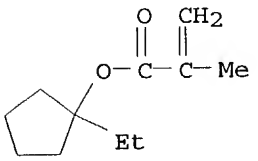
CRN 1663-39-4
CMF C7 H12 O2



RN 326925-68-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

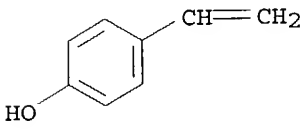
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

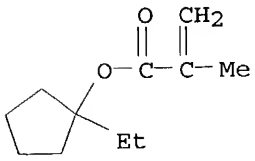
CRN 2628-17-3
CMF C8 H8 O



RN 345580-95-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

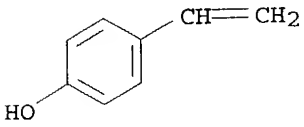
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM C07D207-408
ICS C07D209-76; C07D491-18; C08F212-14; G03F007-004; G03F007-039; H01L021-027; H01L021-30

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 27

ST sulfonyloxydicarboxyimide photoacid generator **chem amplified resist**; far UV **resist** sulfonyloxydicarboxyimide photoacid generator; electron beam **resist** sulfonyloxydicarboxyimide photoacid generator; hexyloxybenzenesulfonyloxy norbornenedicarboximide photoacid generator **resist**

IT Electron beam lithography
Electron beam **resists**
Photolysis catalysts
(N-sulfonyloxydicarboxyimides as photoacid generators for far-UV or electron beam **resists** remaining no foreign substances on stripping)

IT Photolithography
Photoresists
(UV, far-UV; N-sulfonyloxydicarboxyimides as photoacid generators for far-UV or electron beam **resists** remaining no foreign substances on stripping)

IT 640276-37-5P 640276-38-6P 640276-39-7P 640276-40-0P 640276-41-1P 640276-42-2P 640276-43-3P 640276-44-4P 640276-45-5P 640276-46-6P 640276-47-7P
RL: CAT (Catalyst use); **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(N-sulfonyloxydicarboxyimides as photoacid generators for far-UV or electron beam **resists** remaining no foreign substances on stripping)

IT 1132-66-7P, Hexyloxybenzene 1145-45-5P
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(N-sulfonyloxydicarboxyimides as photoacid generators for far-UV or electron beam **resists** remaining no foreign substances on stripping)

IT 108-95-2, Phenol, reactions 111-25-1, Hexyl bromide 111-83-1, Octyl bromide 576-26-1, 2,6-Dimethylphenol 1077-16-3 2189-60-8, 1-Phenyloctane 6066-82-6, N-Hydroxysuccinimide 21715-90-2, N-Hydroxy-5-norbornene-2,3-dicarboximide 55029-20-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(N-sulfonyloxydicarboxyimides as photoacid generators for far-UV or electron beam **resists** remaining no foreign substances on stripping)

IT 24979-70-2D, p-Hydroxystyrene homopolymer, ethoxyethyl ether 130501-59-6 147625-42-1D, ethoxyethyl ether **159296-87-4**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer 326925-68-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene **copolymer 345580-95-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene-styrene **copolymer** 369385-37-5D, ethoxyethyl ether 406909-44-2 552840-49-0 595558-21-7 640277-35-6, p-Hydroxystyrene-indene **copolymer** tert-butoxycarboxylate ester
RL: TEM (Technical or engineered material use); USES (Uses)
(N-sulfonyloxydicarboxyimides as photoacid generators for far-UV or electron beam **resists** remaining no foreign substances on stripping)

L26 ANSWER 4 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:950589 CAPLUS
DOCUMENT NUMBER: 140:21274
TITLE: Novel sulfonyldiazomethanes, photoacid generators, **resist** compositions, and patterning process
INVENTOR(S): Kobayashi, Katsuhiro; Ohsawa, Youichi; Hasegawa, Koji; Yoshihara, Takao; Maeda, Kazunori; Fujii, Toshihiko
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 35 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003224298	A1	20031204	US 2003-426623	20030501
JP 2004026809	A2	20040129	JP 2003-118155	20030423

PRIORITY APPLN. INFO.: JP 2002-129681 A 20020501
OTHER SOURCE(S): MARPAT 140:21274
AB Sulfonyldiazomethane compds. containing a long-chain alkylcyclohexyl group are

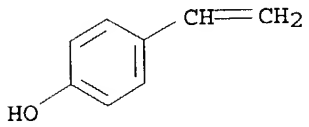
novel and useful as photoacid generators. **Chemical amplification** type photoresist compns. comprising the same are suited for microfabrication because of many advantages including improved resolution, improved focus latitude, minimized line width variation or shape degradation even on long-term PED, minimized debris left after coating, development and peeling, and improved pattern profile after development.

IT **159296-87-4**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer 326925-68-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene **copolymer**
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(resin; and sulfonyldiazomethanes photoacid generators for **resist** compns.)

RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

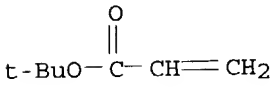
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

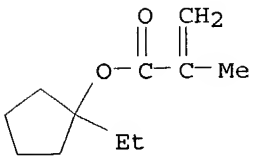
CRN 1663-39-4
CMF C7 H12 O2



RN 326925-68-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

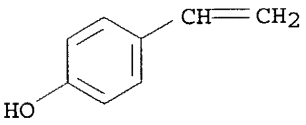
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03C005-00
ICS C07C317-26
NCL 430313000; 534838000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST sulfonyldiazomethanes photoacid generator photoresist compn patterning process
IT **Photoresists**
(novel sulfonyldiazomethanes photoacid generators for **resist** compns.)
IT 14159-45-6, Bis(4-methylphenylsulfonyl)diazomethane 39153-56-5, Bis(2,4-dimethylphenylsulfonyl)diazomethane 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 138529-84-7, Bis(tert-butylsulfonyl)diazomethane 195723-94-5, (4-tert-Butoxyphenyl)diphenylsulfonium 10-camphorsulfonate
RL: TEM (Technical or engineered material use); USES (Uses)
(novel sulfonyldiazomethanes, photoacid generators, **resist** compns., and patterning process)
IT 149552-10-3P 631897-79-5P 631897-83-1P
RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of novel sulfonyldiazomethanes photoacid generators for **resist** compns.)
IT 631897-82-0P 631897-86-4P 631897-89-7P
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(preparation of novel sulfonyldiazomethanes photoacid generators for **resist** compns.)
IT 941-55-9, p-Toluenesulfonylazide 91175-02-9 179245-36-4 203132-72-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of novel sulfonyldiazomethanes photoacid generators for **resist** compns.)

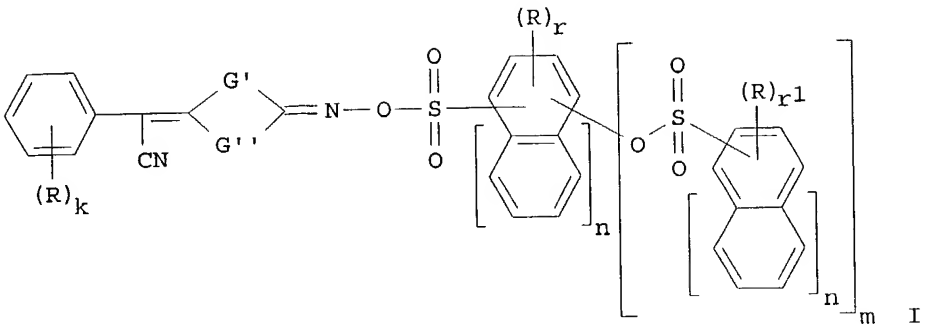
IT 631897-80-8P 631897-81-9P 631897-84-2P 631897-85-3P 631897-87-5P 631897-88-6P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of novel sulfonyldiazomethanes photoacid generators for **resist** compns.)

IT 24979-70-2D, Poly(p-hydroxystyrene), hydroxyl group protected **159296-87-4**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer 326925-68-2**, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene **copolymer** 552840-52-5, Indene-p-hydroxystyrene **copolymer** 552840-54-7
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(resin; and sulfonyldiazomethanes photoacid generators for **resist** compns.)

L26 ANSWER 5 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:912695 CAPLUS
DOCUMENT NUMBER: 139:401547
TITLE: Photoacid generators and **chemically amplified resist** compositions for patterning process
INVENTOR(S): Ohsawa, Youichi; Kobayashi, Katsuhiro; Takemura, Katsuya; Tsuchiya, Junji; Maeda, Kazunori
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 49 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003215738	A1	20031120	US 2003-393006	20030321
JP 2004004614	A2	20040108	JP 2003-71473	20030317

PRIORITY APPLN. INFO.: JP 2002-80649 A 20020322
OTHER SOURCE(S): MARPAT 139:401547
GI



AB Photoacid generators are provided by O-arylsulfonyl-oxime compds. having general formula I (R = H, F, Cl, NO2, alkyl, alkoxy; n = 0, 1; m = 1, 2; r = 0-4; r1 = 0-5; k = 0-4; G1, G2 = S, -CH=CH-). **Chemical amplified resist** compns. comprising the photoacid generators have many advantages including improved resolution, improved focus latitude, minimized line width variation or shape degradation even on long-term PED, and improved pattern profile after development. Because of high resolution, the compns. are suited for microfabrication, especially by deep UV lithog.

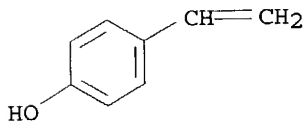
IT **159296-87-4**, p-Hydroxystyrene-tert-butyl **acrylate copolymer** **326925-68-2**, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generators and **chemical amplified resist** compns. for patterning process)

RN 159296-87-4 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

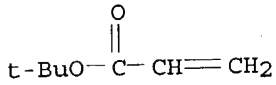
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

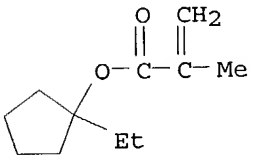
CRN 1663-39-4
CMF C7 H12 O2



RN 326925-68-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

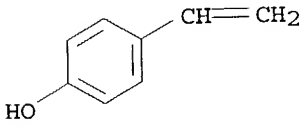
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03F007-004
ICS C07C309-76; C07D333-36
NCL 430270100; 430921000; 430919000; 430326000; 549063000; 558047000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST photolithog UV photoacid generator **chem amplified** **resist** compn
IT Photolithography
(UV; photoacid generators and **chemical amplified** **resist** compns. for patterning process)
IT **Photoresists**
(photoacid generators and **chemical amplified** **resist** compns. for patterning process)
IT 102-82-9, Tri-n-butylamine 3235-51-6, Tris(2-methoxyethyl)amine

KOROMA EIC1700

RL: TEM (Technical or engineered material use); USES (Uses)
(basic compound; photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 462081-93-2
RL: TEM (Technical or engineered material use); USES (Uses)
(crosslinker; photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 69-72-7, Salicylic acid, uses 126-00-1
RL: TEM (Technical or engineered material use); USES (Uses)
(organic acid; photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 625838-21-3P 625838-22-4P 625838-23-5P 625838-24-6P
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photoacid generator; photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 39153-56-5, Bis(2,4-dimethylphenylsulfonyl)diazomethane 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 195723-94-5, (4-tert-Butoxyphenyl)diphenylsulfonium 10-camphor-sulfonate 219651-32-8 326925-52-4 625849-55-0
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 625838-43-9P
RL: PRP (Properties); **SPN (Synthetic preparation)**; **PREP (Preparation)**
(photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 825-52-5, 2-Hydroxyimino-2-phenylacetonitrile 267420-08-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 625838-25-7P 625838-26-8P 625838-27-9P 625838-28-0P 625838-29-1P 625838-30-4P 625838-31-5P 625838-32-6P 625838-33-7P 625838-34-8P 625838-35-9P 625838-36-0P 625838-37-1P 625838-38-2P 625838-39-3P 625838-40-6P 625838-41-7P 625838-42-8P
RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**
(photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 24979-70-2D, Poly(p-hydroxystyrene), acetyl, ethoxyethyl and tert-butoxycarbonyl derivs. **159296-87-4**, p-Hydroxystyrene-tert-butyl **acrylate copolymer 326925-68-2**, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer** 345580-95-2 369385-37-5D, ethoxyethyl derivs. 552840-49-0 552840-50-3 552840-52-5D, tert-butoxycarbonyl derivs. 552840-54-7
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generators and **chemical amplified resist** compns. for patterning process)

IT 60872-03-9P 121347-21-5P 172202-15-2P 326925-61-5P 418767-69-8P 422309-80-6P 422309-81-7P 595558-01-3P 595558-02-4P 595558-03-5P 595558-04-6P 595558-05-7P 595558-06-8P

RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**
; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of photoacid generators)

IT 98-59-9, p-Toluenesulfonic acid chloride 98-67-9, Benzenesulfonic acid, 4-hydroxy- 135-76-2, Sodium 2,6-Naphtholsulfonate 1310-73-2, Sodium hydroxide, reactions 1321-14-8, Potassium guaiacolsulfonate 6099-57-6, Sodium 1,4-naphtholsulfonate 10026-13-8, Phosphorus pentachloride 20215-36-5, Sodium 1,8-naphtholsulfonate 21799-87-1, Potassium hydroquinonesulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of photoacid generators)

IT 97-64-3, Ethyl lactate 84540-57-8, Propylene glycol methyl ether acetate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; photoacid generators and **chemical amplified resist** compns. for patterning process)

L26 ANSWER 6 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:777219 CAPLUS
DOCUMENT NUMBER: 139:299200
TITLE: **Copolymer** for use in **chemical amplification resists**
INVENTOR(S): Ito, Hiroshi
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003186160	A1	20031002	US 2002-91373	20020304
JP 2003292542	A2	20031015	JP 2003-50104	20030226

PRIORITY APPLN. INFO.: US 2002-91373 A 20020304

AB A **copolymer** is provided for use in a lithog. photoresist composition, particularly a **chemical amplification** photoresist. In a preferred embodiment, the **copolymer** is substantially transparent to deep UV radiation, i.e., radiation of a wavelength less than 250 nm, including 157 nm, 193 nm and 248 nm radiation, and has improved sensitivity and resolution In one embodiment, the **copolymer** is comprised of an α-cyano- or an α-trifluoro-methacrylate monomer unit and a vinyl ether monomer unit. A lithog. photoresist composition containing the fluorinated **copolymer** is also provided, as is a process for using the composition to generate **resist** images on a substrate, i.e., in the manufacture of integrated circuits or the like.

IT **478623-13-1P 478623-14-2P 478623-15-3P 478623-16-4P**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**copolymer** for use in **chemical amplification**

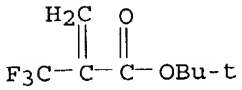
resists)

RN 478623-13-1 CAPLUS

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with 2-(ethenyloxy)-2-methylpropane (9CI) (CA INDEX NAME)

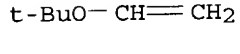
CM 1

CRN 105935-24-8
CMF C8 H11 F3 O2



CM 2

CRN 926-02-3
CMF C6 H12 O

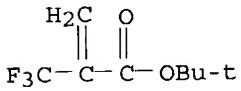


RN 478623-14-2 CAPLUS

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with ethoxyethene (9CI) (CA INDEX NAME)

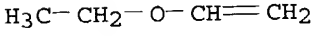
CM 1

CRN 105935-24-8
CMF C8 H11 F3 O2



CM 2

CRN 109-92-2
CMF C4 H8 O

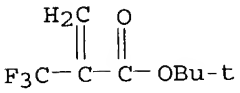


RN 478623-15-3 CAPLUS

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with 2,3-dihydrofuran (9CI) (CA INDEX NAME)

CM 1

CRN 105935-24-8
CMF C8 H11 F3 O2



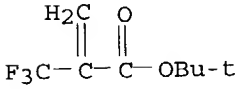
CM 2

CRN 1191-99-7
CMF C4 H6 O

RN 478623-16-4 CAPLUS
CN 2-Propenoic acid, 2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with 1,3-dioxol-2-one (9CI) (CA INDEX NAME)

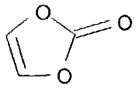
CM 1

CRN 105935-24-8
CMF C8 H11 F3 O2



CM 2

CRN 872-36-6
CMF C3 H2 O3



KOROMA EIC1700

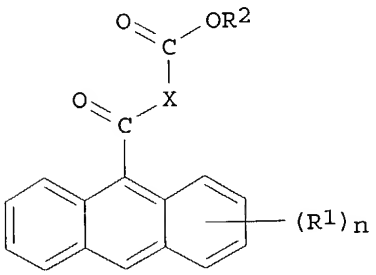
IC ICM G03F007-038
NCL 430270100; 430325000; 430907000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **copolymer chem amplification** photoresist
IT **Photoresists**
(**copolymer** for use in **chemical amplification resists**)
IT **478623-13-1P 478623-14-2P 478623-15-3P 478623-16-4P** 608525-59-3P
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**copolymer** for use in **chemical amplification resists**)
IT 608525-58-2P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**copolymer** for use in **chemical amplification resists**)
IT 335-08-0P, 1,1,1-Trifluoroacetone cyanohydrin 381-84-0P, 2-(Trifluoromethyl)**Acrylonitrile** 381-98-6P, 2-(Trifluoromethyl)**Acrylic** Acid 382-90-1P, Methyl α-(Trifluoromethyl) **acrylate** 4588-51-6P
RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of **copolymer** for use in **chemical amplification resists**)
IT 79-37-8, Oxalyl chloride 108-24-7, Acetic anhydride 143-33-9, Sodium cyanide 421-50-1, 1,1,1-Trifluoroacetone
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of **copolymer** for use in **chemical amplification resists**)
IT 382-43-4P, 3-Hydroxy-2-(trifluoromethyl)propionic acid 105935-24-8P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of **copolymer** for use in **chemical amplification resists**)

L26 ANSWER 7 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:717279 CAPLUS
DOCUMENT NUMBER: 139:237714
TITLE: Anthracene derivative and radiation-sensitive resin composition
INVENTOR(S): Nagai, Tomoki; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): JSR Corporation, Japan
SOURCE: Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1343048	A2	20030910	EP 2003-5053	20030306
EP 1343048	A3	20040114		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2003194634	A1	20031016	US 2003-379507	20030306
JP 2003327560	A2	20031119	JP 2003-59443	20030306

PRIORITY APPLN. INFO.: JP 2002-64549 A 20020308
OTHER SOURCE(S): MARPAT 139:237714
GI



I

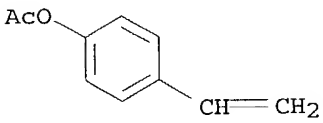
AB A novel anthracene derivative useful as an additive to a radiation-sensitive resin composition is disclosed. The anthracene derivative has formula I, (R1 = hydroxyl group, C1-2- monovalent organic group; n = 0-9; X = single bond, C1-12 divalent organic group; R2 = monovalent acid-dissociable group). The radiation-sensitive resin composition comprises the anthracene derivative of the formula I, a resin insol. or scarcely soluble in alkali, but becomes alkali soluble in the presence of an acid, and a photoacid generator. The composition is useful as a **chemical-amplified resist** for microfabrication utilizing deep UV rays, typified by a KrF excimer laser and ArF excimer laser.

IT **221549-67-3DP**, 4-Acetoxystyrene-tert-butyl **acrylate** -styrene **copolymer**, hydrolyzed
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive resin composition containing anthracene derivative additive and)

RN 221549-67-3 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

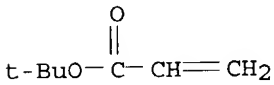
CM 1

CRN 2628-16-2
CMF C10 H10 O2



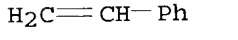
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8



IC ICM G03F007-004
ICS C07C015-28
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST photoresist anthracene deriv radiation sensitive resin compn
IT **Photoresists**
(anthracene derivative and radiation-sensitive resin composition)
IT 109-92-2DP, Ethyl vinyl ether, reaction product with Hydroxystyrene **copolymer**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(anthracene derivative and radiation-sensitive resin composition)
IT 594840-62-7P
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES

(Uses)
(anthracene derivative for radiation-sensitive resin composition)
IT 594840-63-8P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(anthracene derivative for radiation-sensitive resin composition)
IT 642-31-9, 9-Anthracenecarboxaldehyde 723-62-6, 9-Anthracene carboxylic acid 5292-43-3, tert-Butyl bromoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of anthracene derivative for radiation-sensitive resin composition)
IT 123589-22-0DP, 4-tert-Butoxystyrene-4-Hydroxystyrene **copolymer**, reaction product with Et vinyl ether **221549-67-3DP**, 4-Acetoxystyrene-tert-butyl **acrylate**-styrene **copolymer**, hydrolyzed 406198-64-9DP, 4-Acetoxystyrene-4-tert-Butoxystyrene-styrene **copolymer**, hydrolyzed
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive resin composition containing anthracene derivative additive
and)

L26 ANSWER 8 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:656292 CAPLUS
DOCUMENT NUMBER: 139:188315
TITLE: **Copolymer**, polymer mixture, and radiation-sensitive resin composition
INVENTOR(S): Nagai, Tomoki; Shimizu, Daisuke; Shimokawa, Tsutomu; Miyajima, Fumihisa; Miyaji, Masaaki
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 22 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003157423	A1	20030821	US 2002-321518	20021218
PRIORITY APPLN. INFO.:			JP 2001-387913 A	20011220
			JP 2002-329469 A	20021113

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The present invention relates to a **copolymer** having recurring units of the following formulas I, II, and III, (R1,4,5,6 = H, Me group;

R2,3,7 = monovalent organic group; k = 1-2; l = 0-4; n = 1-3; m = 0-3; R8 = substituted Me group, 1-substituted Et group, 1-branched alkyl group, triorganosilyl group, triorgano-germyl group, alkoxycarbonyl group, acyl group, cyclic acid-dissociable group, with two or more R8 groups being the same or different; q = 1-3; p = 0-3); the **copolymer** having a GPC average mol. weight of 3,000-100,000. The composition is useful as a polymer component for a radiation-sensitive resin composition suitable as a **chemical-amplified resist.**

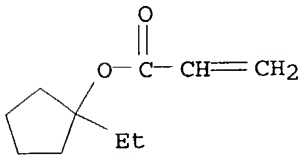
IT **577796-36-2DP**, p-Acetoxystyrene-p-tert-butoxystyrene-1-ethylcyclopentyl **acrylate copolymer**, hydrolyzed
577796-39-5DP, p-Acetoxystyrene-p-tert-butoxystyrene-1-ethylcyclohexyl **acrylate copolymer**, hydrolyzed
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polymer mixture for radiation-sensitive resin composition for)

RN 577796-36-2 CAPLUS

CN 2-Propenoic acid, 1-ethylcyclopentyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

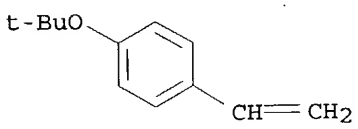
CM 1

CRN 326925-69-3
CMF C10 H16 O2



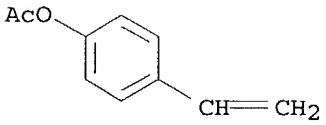
CM 2

CRN 95418-58-9
CMF C12 H16 O



CM 3

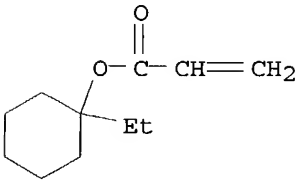
CRN 2628-16-2
CMF C10 H10 O2



RN 577796-39-5 CAPLUS
CN 2-Propenoic acid, 1-ethylcyclohexyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

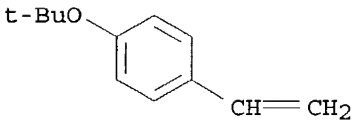
CM 1

CRN 251909-25-8
CMF C11 H18 O2



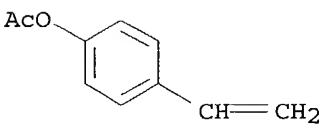
CM 2

CRN 95418-58-9
CMF C12 H16 O



CM 3

CRN 2628-16-2
CMF C10 H10 O2



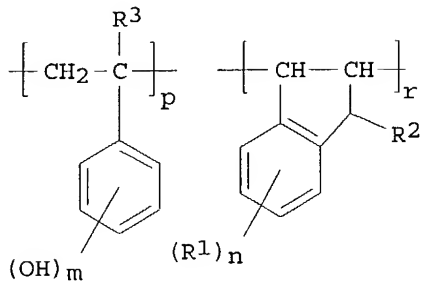
KOROMA EIC1700

IC ICM G03F007-039
ICS G03F007-075; C08F232-04; C08F232-08; G03F007-021
NCL 430170000; 430270100; 430914000; 430921000; 525206000; 525211000; 525212000; 525210000; 525216000; 526240000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST photoresist **copolymer** mixt radiation sensitive resin compn
IT **Photoresists**
(polymer mixture for radiation-sensitive resin composition for)
IT 123589-22-0DP, p-tert-Butoxystyrene-p-hydroxystyrene **copolymer**, reaction product with Et vinyl ether
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(VPT 1503S; polymer mixture for radiation-sensitive resin composition for)
IT 109-92-2DP, Ethyl vinyl ether, reaction product with hydroxystyrene polymer 95418-60-3DP, hydrolyzed or partially hydrolyzed **577796-36-2DP**, p-Acetoxystyrene-p-tert-butoxystyrene-1-ethylcyclopentyl **acrylate copolymer**, hydrolyzed 577796-37-3DP, hydrolyzed 577796-37-3DP, hydrolyzed and reaction product with Et vinyl ether 577796-38-4DP, hydrolyzed **577796-39-5DP**, p-Acetoxystyrene-p-tert-butoxystyrene-1-ethylcyclohexyl **acrylate copolymer**, hydrolyzed
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polymer mixture for radiation-sensitive resin composition for)

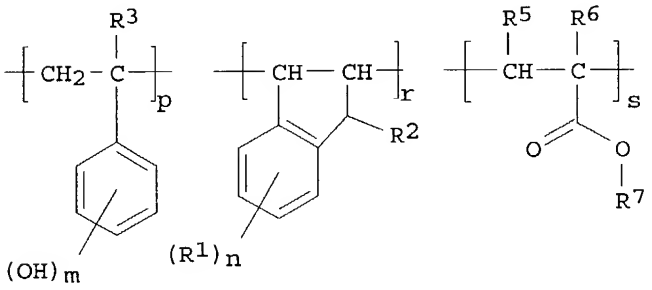
L26 ANSWER 9 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:653455 CAPLUS
DOCUMENT NUMBER: 139:188310
TITLE: Negative **resist** materials and their patterning with high-energy ray or electron beam
INVENTOR(S): Takeda, Takanobu; Watanabe, Osamu; Kusaki, Wataru; Koitabashi, Ryuji
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003233185	A2	20030822	JP 2002-32380	20020208
US 2004023151	A1	20040205	US 2003-351097	20030123

PRIORITY APPLN. INFO.: JP 2002-32380 A 20020208
GI



I



II

AB The neg. **resist** materials contain macromol. compds. with Mw 1,000-500,000, represented by general formula I or II (R1, R2 = H, OH, linear or branched alkyl, alkoxy which may be substituted; halogen; R3, R5 = H, Me; R6 = H, Me, alkoxycarbonyl, cyano, halogen; R7 = C1-20 alkyl which may be substituted; n = 0-4 integer; m = 0-5 integer; p, s ≥0 integer; r = pos. integer) and optionally organic solvents, crosslinking agents, photoacid generators, and bases and/or surfactants. The **resist** materials are applied on substrates, heated, exposed to high-energy beam such as DUV or electron beam, and developed with alkalis. The **resist** materials have high sensitivity, high resolution, and excellent etching **resistance**, and are useful for formation of fine patterns for ultra LSI fabrication and mask pattern-forming materials.

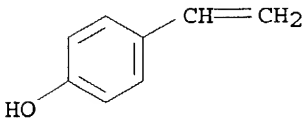
IT **581075-41-4P**, Glycidyl methacrylate-4-hydroxystyrene-indene **copolymer** **581075-42-5P**, 2-Hydroxyethyl methacrylate-4-hydroxystyrene-indene **copolymer**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(neg. **resist** materials and their patterning with high-energy ray or electron beam)

RN 581075-41-4 CAPLUS

CN 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, polymer with 4-ethenylphenol and 1H-indene (9CI) (CA INDEX NAME)

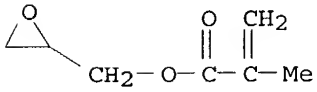
CM 1

CRN 2628-17-3
CMF C8 H8 O



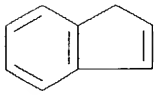
CM 2

CRN 106-91-2
CMF C7 H10 O3



CM 3

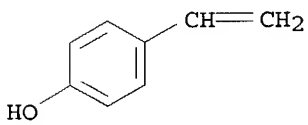
CRN 95-13-6
CMF C9 H8



RN 581075-42-5 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 4-ethenylphenol and 1H-indene (9CI) (CA INDEX NAME)

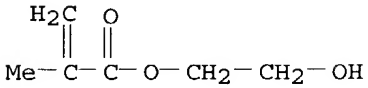
CM 1

CRN 2628-17-3
CMF C8 H8 O



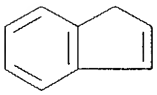
CM 2

CRN 868-77-9
CMF C6 H10 O3



CM 3

CRN 95-13-6
CMF C9 H8



IC ICM G03F007-038
ICS C08F012-22; C08F020-12; C08F032-08; G03F007-004; G03F007-033; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST substitutive indene **copolymer** neg **resist** material; **chem amplified resist** neg indene **copolymer**; electron beam **resist** neg indene **copolymer**; deep UV **resist** neg indene **copolymer** ; photoresist neg indene **copolymer**

IT Negative **photoresists**
(deep UV; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(fluoroalkyl group-containing, **acrylic**, block, surfactant; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT **Acrylic** polymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(fluoroalkyl-containing fluoropolymer-, block, surfactant; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT **Acrylic** polymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material

use); USES (Uses)
(fluoroalkyl-containing fluoropolymer-, surfactant; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT Electron beam **resists**
(neg.; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(perfluoroalkyl-containing, **acrylic**, surfactant; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT 102-82-9, Tributylamine 3235-51-6, Tris(2-methoxyethyl)amine
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(base; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT 3089-11-0, Hexamethoxymethylmelamine 17464-88-9, Tetramethoxymethyl glycoluril
RL: RCT (Reactant); RACT (Reactant or reagent)
(crosslinking agent; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT 420808-57-7P, Acetoxystyrene-indene **copolymer** 581075-39-0P, Acetoxystyrene-glycidyl methacrylate-indene **copolymer** 581075-40-3P, Acetoxystyrene-2-hydroxyethyl methacrylate-indene **copolymer**
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT 552840-52-5P, 4-Hydroxystyrene-indene **copolymer** **581075-41-4P**, Glycidyl methacrylate-4-hydroxystyrene-indene **copolymer** **581075-42-5P**, 2-Hydroxyethyl methacrylate-4-hydroxystyrene-indene **copolymer**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT 138529-84-7, Bis(tert-butylsulfonyl)diazomethane 326925-52-4 581075-43-6
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; neg. **resist** materials and their patterning with high-energy ray or electron beam)

IT 11114-17-3, FC 430 96231-87-7, Surflon S 381
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(surfactant; neg. **resist** materials and their patterning with high-energy ray or electron beam)

L26 ANSWER 10 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:371835 CAPLUS
DOCUMENT NUMBER: 138:376423

TITLE: **Chemically amplified** positive **resist** compositions with suppressed variation in line width on on high-reflection substrates
INVENTOR(S): Nishiyama, Fumiyuki; Fujimori, Toru
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003140351	A2	20030514	JP 2001-341933	20011107

PRIORITY APPLN. INFO.: JP 2001-341933 20011107
OTHER SOURCE(S): MARPAT 138:376423

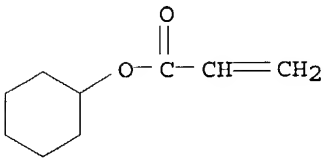
AB The pos. **resist** compns. contain (a) resins A bearing acid-decomposing groups represented by general formula OCHMeO(CR1R2)mZ1 [R1, R2 = H, (substituted) alkyl; m = 1-20 integer; Z1 = (substituted) alkyl, aryl, or aralkyl-substituted benzyl or cyclohexyl with number of the substituent 0-5 integer] and/or B bearing acid-decomposing groups represented by general formula OCMeOR4 (R4 = alkyl); these resins increase solubility in alkali developers by acids; (b) photoacid generators, preferably compds. having a sulfonium salt structure and/or a diazodisulfone structure, and (c) compds. represented by general formula , and R5OCR6R7OXYlZ2 [R5 = (substituted) monovalent alkyl; R6, R7 = H, alkylene; X = (substituted) alkylene; Y = divalent linkage; Z2 = (substituted) heterocyclic group; l = 0, 1]. Variation in line width due to variation in **resist** film thickness on high-reflection substrates having uneven surfaces (such as bare Si wafers, polysilicon wafers, etc.) has been greatly decreased.

IT **419536-25-7DP**, Cyclohexyl **acrylate**-p-hydroxystyrene **copolymer**, reaction products with Et vinyl ether
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical amplified** pos. **resist** compns. with suppressed variation in line width on on high-reflection substrates)

RN 419536-25-7 CAPLUS
CN 2-Propenoic acid, cyclohexyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

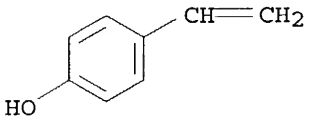
CM 1

CRN 3066-71-5
CMF C9 H14 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03F007-039
ICS C08F008-00; C08F012-22; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST pos **resist** acid decompg group resin; sulfonium salt **chem amplified** pos **resist**; diazodisulfone **chem amplified** pos **resist**; deep UV **resist** pos phenol polymer

IT Positive **photoresists**
(**chemical amplified** pos. **resist** compns. with suppressed variation in line width on on high-reflection substrates)

IT Sulfones
RL: CAT (Catalyst use); USES (Uses)
(diazodi-, photoacid generator; **chemical amplified** pos. **resist** compns. with suppressed variation in line width on on high-reflection substrates)

IT Sulfonium compounds
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; **chemical amplified** pos. **resist** compns. with suppressed variation in line width on on high-reflection substrates)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with poly(4-hydroxystyrene) 926-02-3DP, tert-Butyl vinyl ether, reaction products with poly(4-hydroxystyrene), transacetalation with cyclohexaneethanol 4442-79-9DP, Cyclohexaneethanol, transacetalation with reaction product of poly(4-hydroxystyrene) with tert-Bu vinyl ether 24979-70-2DP, VP 15000, reaction products with tert-Bu vinyl ether, transacetalation with cyclohexaneethanol 376359-32-9DP, p-tert-Butylstyrene-p-hydroxystyrene **copolymer**, reaction products with tert-Bu vinyl ether, transacetalation with cyclohexaneethanol 419536-25-7DP,

Cyclohexyl **acrylate**-p-hydroxystyrene **copolymer**, reaction products with Et vinyl ether
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical amplified** pos. **resist** compns. with suppressed variation in line width on on high-reflection substrates)

IT 524056-56-2 524056-58-4 524056-60-8 524056-62-0 524056-64-2
524056-66-4 524056-68-6 524056-70-0 524056-72-2 524056-74-4
524056-76-6 524056-78-8 524056-80-2 524056-82-4 524056-84-6
524056-86-8 524056-88-0 524056-90-4 524056-92-6 524056-94-8
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(**chemical amplified** pos. **resist** compns. with suppressed variation in line width on on high-reflection substrates)

IT 66003-78-9 197447-16-8
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; **chemical amplified** pos. **resist** compns. with suppressed variation in line width on on high-reflection substrates)

L26 ANSWER 11 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:369196 CAPLUS
DOCUMENT NUMBER: 138:376418
TITLE: **Chemically amplified** positive **resist** compositions having decreased variation in line width and good performances on uneven-surfaced substrates
INVENTOR(S): Nishiyama, Fumiyuki; Fujimori, Toru
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003140343	A2	20030514	JP 2001-336413	20011101
US 2003134221	A1	20030717	US 2002-285502	20021101

PRIORITY APPLN. INFO.: JP 2001-336413 A 20011101

AB The pos. **resist** compns. contain (a) resins A and/or B and C, each bearing acid-decomposing groups represented by general formulas OCHMeO(CR1R2)mZ1 [for resin A; R1, R2 = H, (substituted) alkyl; m = 1-20 integer; Z1 = (substituted) alkyl, aryl, or aralkyl-substituted benzyl or cyclohexyl with number of the substituent 0-5 integer], OCMeOR4 (for resin B; R4 = alkyl), and OCR5R6OXYlZ2 [for resin C; R5, R6 = H, alkylene; X = (substituted) alkylene; Y = divalent linkage; Z2 = (substituted) heterocyclic group; l = 0, 1]; these resins increase solubility in alkali developers by acids; and (b) photoacid generators, preferably compds. having a sulfonium salt structure and/or a diazodisulfone structure. Variation in line width due to variation in **resist** film

thickness on high-reflection substrates having uneven surfaces (such as bare Si wafers, polysilicon wafers, etc.) has been greatly decreased.

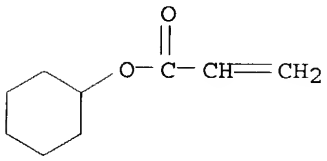
IT **419536-25-7DP**, Cyclohexyl **acrylate**-p-hydroxystyrene **copolymer**, reaction products with Et vinyl ether
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

RN 419536-25-7 CAPLUS

CN 2-Propenoic acid, cyclohexyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

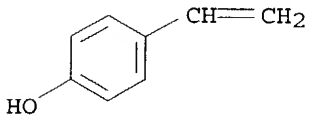
CM 1

CRN 3066-71-5
CMF C9 H14 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03F007-039
ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST pos **resist** acid decompg group resin; sulfonium salt **chem amplified** pos **resist**; diazodisulfone **chem amplified** pos **resist**; deep UV **resist** pos phenol polymer

IT Positive **photoresists**
(**chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

IT Sulfones
RL: CAT (Catalyst use); USES (Uses)

(diazodi-, photoacid generator; **chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

IT Sulfonium compounds
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; **chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

IT 88-14-2DP, 2-Furancarboxylic acid, reaction products with poly(4-hydroxystyrene) 527-72-0DP, 2-Thiophenecarboxylic acid, reaction products with poly(4-hydroxystyrene) 616-45-5DP, 2-Pyrrolidone, reaction products with poly(4-hydroxystyrene) 2786-07-4DP, 2-Thienyllithium, reaction products with poly(4-hydroxystyrene) 5713-61-1DP, 2-Thienylmagnesium bromide, reaction products with poly(4-hydroxystyrene) 87957-31-1DP, reaction products with poly(4-hydroxystyrene)
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(**chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with poly(4-hydroxystyrene) 926-02-3DP, tert-Butyl vinyl ether, reaction products with poly(4-hydroxystyrene), transacetalation with cyclohexaneethanol 4442-79-9DP, Cyclohexaneethanol, transacetalation with reaction product of poly(4-hydroxystyrene) with tert-Bu vinyl ether 24979-70-2DP, VP 15000, reaction products with tert-Bu vinyl ether, transacetalation with cyclohexaneethanol 376359-32-9DP, p-tert-Butylstyrene-p-hydroxystyrene **copolymer**, reaction products with tert-Bu vinyl ether, transacetalation with cyclohexaneethanol **419536-25-7DP**, Cyclohexyl **acrylate**-p-hydroxystyrene **copolymer**, reaction products with Et vinyl ether
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

IT 23354-96-3P 86366-53-2P 314056-06-9P 314056-07-0P 314056-08-1P 314056-09-2P
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(compound for acid-labile group; **chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

IT 66003-78-9 138529-81-4 197447-16-8
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; **chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

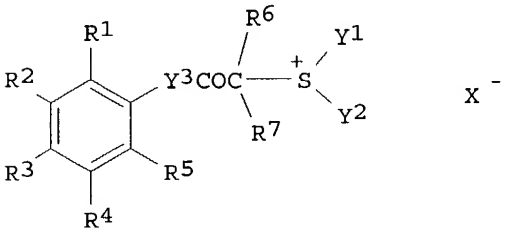
IT 88-14-2P, 2-Furancarboxylic acid 527-72-0P, 2-Thiophenecarboxylic acid 616-45-5P, 2-Pyrrolidone 2786-07-4P, 2-Thienyllithium 5713-61-1P, 2-Thienylmagnesium bromide 7774-73-4P, 3-Thiophenethiol
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of compound for acid-labile group from; **chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

IT 110-75-8, 2-Chloroethyl vinyl ether 1918-77-0, 2-Thiopheneacetic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of compound for acid-labile group from; **chemical amplified** pos. DUV **resist** compns. containing 2 or 3 types of acid-decomposable resins)

L26 ANSWER 12 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:97194 CAPLUS
DOCUMENT NUMBER: 138:145067
TITLE: Positive radiation-sensitive compositions having high sensitivity and high resolution
INVENTOR(S): Kodama, Kunihiko
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 51 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003035948	A2	20030207	JP 2002-141737	20020516
US 2003075708	A1	20030424	US 2002-144536	20020514

PRIORITY APPLN. INFO.: JP 2001-148006 A 20010517
OTHER SOURCE(S): MARPAT 138:145067
GI



I

AB The compns. contain (A) ≥1 compds. generating acids by actinic ray (DUV, electron beam, x-ray, ionic ray) irradiation and represented by general formula I (R1-R5 = H, alkyl, alkoxy, NO2, halo, alkoxycarbonyl, aryl; ≥2 of R1-R5 may be bonded to each other and form ring structure; R6, R7 = H, alkyl, CN, aryl; Y1, Y2 = alkyl, aryl, aralkyl, hetero atom.-containing aromatic group; Y1 and Y2 may be bonded to each other and form ring; Y3 = single bond or divalent linking group; X- = non-nucleophilic anion; ≥1 of R1-R5 and Y1 and/or Y2 are bonded to each other and form ring or ≥1 of R1-R5 and R6 and/or R7 are bonded to each other and form ring; the compound may bear ≥2 of the structure I by bonding via a linking group at desired positions selectted from R1-R7 or Y1 or Y2) and (B) resins bearing groups which can be decomposed by acids and increase

solubility in alkali developers. In another alternative, the compns. contain A, (C) low mol.-weight dissoln. inhibitors with mol. weight ≤3000 and bearing groups which can be decomposed by acids and increase solubility in alkali developers, and (D) resins which are insol. in water and soluble in alkali developers. The compns. are useful for fabrication of lithog. plates, IC, circuit boards for liquid crystals and thermal heads, etc.

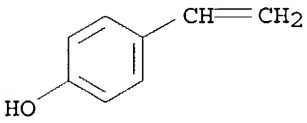
IT **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer** **200808-68-0P**, tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(base polymer; **chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)

RN 159296-87-4 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

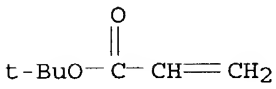
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2

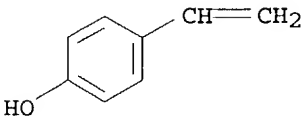


RN 200808-68-0 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

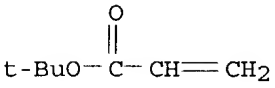
CM 1

CRN 2628-17-3
CMF C8 H8 O



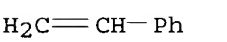
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8



IC ICM G03F007-004
ICS G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST pos DUV **resist** photoacid generator; thioanisole chloroacetic acid chloride reaction photoacid generator; deep UV **resist** pos photoacid generator; radiation sensitive **resist** pos photoacid generator; cyclic ketone silyl enol ether sulfoxide reaction; electron beam **resist** pos photoacid generator; **chem amplified resist** pos photoacid generator; tetralon enol silyl ether sulfoxide reaction
IT Positive **photoresists**
(UV; **chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)
IT Positive **photoresists**
(**chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)
IT Electron beam **resists**
(pos.-working; **chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)
IT 926-02-3DP, tert-Butyl vinyl ether, reaction products with poly(p-hydroxystyrene) 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with poly(p-hydroxystyrene) 24979-70-2DP, VP 8000, reaction

products with tert-Bu vinyl ether 129674-22-2P, p-(tert-Butoxycarbonyloxy)styrene-p-hydroxystyrene **copolymer** **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer** **200808-68-0P**, tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer** 422508-71-2P 422508-72-3P
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(base polymer; **chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)

IT 24979-69-9, Poly(m-hydroxystyrene) 24979-70-2, Poly(p-hydroxystyrene) 24979-74-6, p-Hydroxystyrene-styrene **copolymer** 125325-82-8 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene **copolymer** 199432-82-1 288620-13-3 288620-15-5, p-(1-Benzyloxyethoxy)styrene-p-hydroxystyrene **copolymer** 289706-85-0, p-Acetoxystyrene-p-(1-benzyloxyethoxy)styrene-p-hydroxystyrene **copolymer** 325143-37-1, p-tert-Butylstyrene-p-[1-(cyclohexylethoxy)ethoxy]styrene-p-hydroxystyrene **copolymer** 422508-76-7
RL: TEM (Technical or engineered material use); USES (Uses)
(base polymer; **chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)

IT 340986-46-1 474276-93-2 474510-79-7 474510-82-2 474510-86-6 474510-92-4 474511-05-2 477327-74-5 477327-75-6 477327-80-3 477328-06-6 477328-10-2 477328-11-3 477328-12-4 477328-13-5 477328-14-6 477328-19-1 477328-36-2 477328-38-4 494202-42-5
RL: CAT (Catalyst use); USES (Uses)
(**chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)

IT 454471-15-9P
RL: CAT (Catalyst use); **IMF (Industrial manufacture)**; **PREP (Preparation)**; USES (Uses)
(**chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)

IT 153698-54-5 153698-63-6 153698-65-8 359434-70-1 359434-73-4
RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(dissoln. inhibitor; **chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)

IT 100-68-5, Thioanisole 29059-07-2, Tetralon
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoacid generator preparation from; **chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)

IT 1600-44-8, Tetramethylenesulfoxide 29420-49-3, Potassium nonafluorobutanesulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant in photoacid generator preparation; **chemical-amplified** pos. radiation-sensitive compns. having high sensitivity and high resolution)

L26 ANSWER 13 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:58682 CAPLUS

DOCUMENT NUMBER: 138:129005
TITLE: Electron beam and UV lithographic pattern formation method using **chemically-amplified resist**
INVENTOR(S): Endo, Masayuki; Sasago, Masaru
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: U.S. Pat. Appl. Publ., 28 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003017425	A1	20030123	US 2002-166247	20020611
JP 2003075998	A2	20030312	JP 2002-100944	20020403

PRIORITY APPLN. INFO.: JP 2001-189262 A 20010622
OTHER SOURCE(S): MARPAT 138:129005

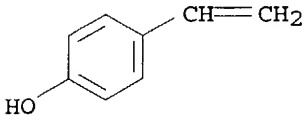
AB A **resist** film with a thickness of 250 nm or less is formed on a semiconductor substrate from a pos. **chemical amplified resist** material including a base polymer whose solubility in an alkaline developer is changed by a function of an acid and an acid generator that has at least one electron attractive group introduced into a meta-position of an aromatic ring included in a counter anion and generates an acid through irradiation with electron beams. The **resist** film is subjected to pattern exposure by irradiating with electron beams or extreme UV of a wavelength of a 1-30 nm band. The **resist** film is developed after the pattern exposure, thereby forming a **resist** pattern. The invention provides a pattern formation method in which lowering of resolution can be suppressed by preventing lowering of contrast in solubility even when a **resist** film has a thickness smaller then 250 nm.

IT **200808-68-0P**, tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer 488820-69-5P**, tert-Butyl **acrylate**-p-hydroxystyrene-p-methylstyrene **copolymer 488820-70-8P**, 1-Adamantyl **acrylate**-p-hydroxystyrene-styrene **copolymer**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(electron beam and UV lithog. pattern formation method using **chemical-amplified resist**)

RN 200808-68-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

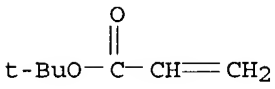
CM 1

CRN 2628-17-3
CMF C8 H8 O



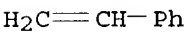
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

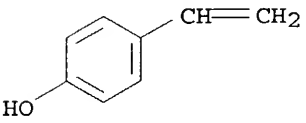
CRN 100-42-5
CMF C8 H8



RN 488820-69-5 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-ethenyl-4-methylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

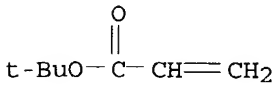
CM 1

CRN 2628-17-3
CMF C8 H8 O



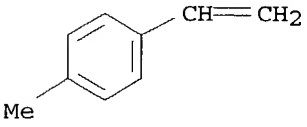
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

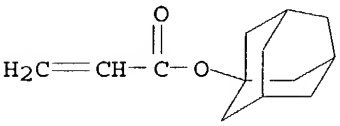
CRN 622-97-9
CMF C9 H10



RN 488820-70-8 CAPLUS
CN 2-Propenoic acid, tricyclo[3.3.1.13,7]dec-1-yl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

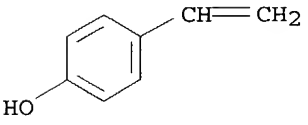
CM 1

CRN 121601-93-2
CMF C13 H18 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 100-42-5
CMF C8 H8

KOROMA EIC1700

$H_2C{=}CH{-}Ph$

IC ICM G03F007-40
NCL 430322000; 430330000; 430296000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST electron beam UV lithog **chem amplified resist** acid generator
IT Photolithography
(UV; electron beam and UV lithog. pattern formation method using **chemical-amplified resist**)
IT Electron beam lithography
Positive **photoresists**
Resists
(electron beam and UV lithog. pattern formation method using **chemical-amplified resist**)
IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate 350251-56-8P 389859-76-1P 488820-71-9P 488820-72-0P 488820-73-1P 488820-74-2P 488820-75-3P
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(acid generator; electron beam and UV lithog. pattern formation method using **chemical-amplified resist**)
IT **200808-68-0P**, tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer 488820-69-5P**, tert-Butyl **acrylate**-p-hydroxystyrene-p-methylstyrene **copolymer 488820-70-8P**, 1-Adamantyl **acrylate**-p-hydroxystyrene-styrene **copolymer**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(electron beam and UV lithog. pattern formation method using **chemical-amplified resist**)
IT 3353-89-7P, Triphenylsulfonium bromide 347841-68-3P
RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(in preparation of acid generator)
IT 108-86-1, Bromobenzene, reactions 576-83-0, 2-Bromomesitylene 945-51-7, Diphenyl sulfoxide 270564-02-8, Tetramethylammonium pentafluorobenzenesulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of acid generator)

L26 ANSWER 14 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:17554 CAPLUS
DOCUMENT NUMBER: 138:98190
TITLE: **Chemically-amplified**

negative-working **resist** compositions for processing with electron beam or x-ray

INVENTOR(S): Takahashi, Akira; Shirakawa, Hiroshi; Adegawa, Yutaka
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003005355	A2	20030108	JP 2001-186705	20010620

PRIORITY APPLN. INFO.: JP 2001-186705 20010620
OTHER SOURCE(S): MARPAT 138:98190
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The compns. comprise (A) compds. generating acids on irradiation with electron beam or x-ray, (B) polymers soluble in aqueous alkaline solns., and (D) ≥1 compds. selected from heterocycles defined by 8 Markush structures such as I, II, III, IV, V, and VI (R11 = H, aliphatic, aromatic, mixed, or heterocyclic amine, amide, imide, ester, halo, halogen substituted alkyl or aryl, OH, carboxyl, thiol, cyano, nitro, formyl, sulfonyl, sulfonamide, acyl, aroyl, alkyl, alkyloxy, alkenyloxy, heterocyclic, aryl, alkenyl, aralkyl; R12 = H, aromatic or heterocyclic amine, halogen-substituted alkyl or aryl, OH, acyl, aroyl, alkyl, alkyloxy, alkenyloxy, heterocyclic, aryl, alkenyl, aralkyl, ester, carbonate ester). The **resists** have excellent stability against post exposure bake. **Resists** with high resolution and excellent profiles are obtained.

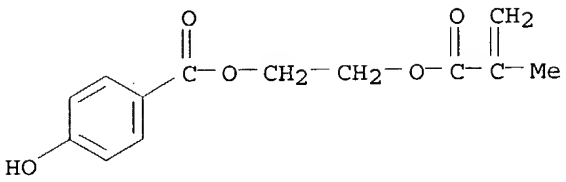
IT **349647-07-0P, Acrylonitrile**-2-hydroxyethyl **acrylate**-2-[(4'-hydroxyphenyl)carbonyloxy]ethyl methacrylate **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

RN 349647-07-0 CAPLUS

CN Benzoic acid, 4-hydroxy-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester, polymer with 2-hydroxyethyl 2-propenoate and 2-propenenitrile (9CI) (CA INDEX NAME)

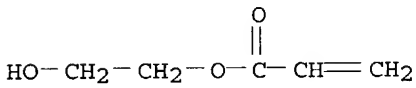
CM 1

CRN 34573-66-5
CMF C13 H14 O5



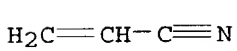
CM 2

CRN 818-61-1
CMF C5 H8 O3



CM 3

CRN 107-13-1
CMF C3 H3 N



IC ICM G03F007-004
ICS H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 28
ST **chem amplified** neg working photoresist electron beam; x ray neg working photoresist; heterocyclic additive neg working photoresist; pteridine deriv additive neg working photoresist
IT Negative **photoresists**
(**chemical-amplified**; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)
IT 130501-59-6P, 4-Hydroxystyrene homopolymer acetate 173786-80-6DP, 4-Acetoxystyrene-4-methoxystyrene **copolymer**, hydrolyzed
349647-07-0P, **Acrylonitrile**-2-hydroxyethyl **acrylate**-2-[(4'-hydroxyphenyl)carbonyloxy]ethyl methacrylate **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(**chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 110726-28-8, 1-[α-Methyl-α-(4-hydroxyphenyl)ethyl]-4-[α,α-bis(4-hydroxyphenyl)ethyl]benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(**chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 146-14-5 146-17-8, Riboflavin 5'-(dihydrogen phosphate) 487-21-8, 2,4(1H,3H)-Pteridinedione 490-59-5, Benzo[g]pteridine-2,4(1H,3H)-dione 945-24-4 1005-24-9 1086-80-2 1910-42-5 2236-60-4 24979-69-9 24979-70-2 24979-74-6 24980-18-5 25535-16-4 28721-76-8 31722-01-7 86690-04-2 149614-53-9 321164-59-4 345212-27-3 396098-38-7 437652-81-8 477705-24-1 482636-16-8 482636-17-9 482636-18-0 482636-19-1
RL: TEM (Technical or engineered material use); USES (Uses)
(**chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 162846-57-3P
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); **PREP (Preparation)**; RACT (Reactant or reagent); USES (Uses)
(crosslinking agent; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 161679-94-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(crosslinking agent; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
RL: TEM (Technical or engineered material use); USES (Uses)
(crosslinking agent; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

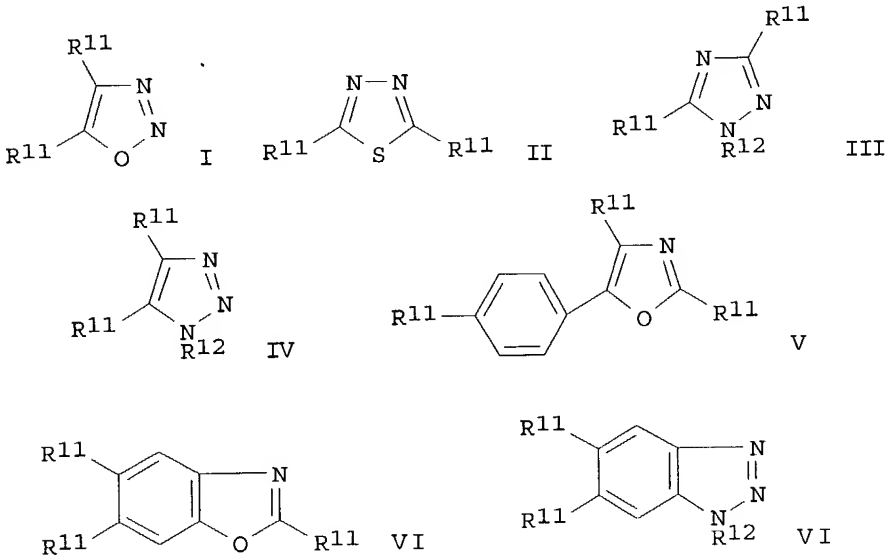
IT 39153-56-5 138529-81-4 138529-84-7 241806-75-7 241806-76-8 258341-99-0 258872-05-8 312386-77-9 338445-31-1 341548-86-5 343629-51-6 437652-80-7 482636-20-4
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

L26 ANSWER 15 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:14489 CAPLUS
DOCUMENT NUMBER: 138:98186
TITLE: **Chemically-amplified** negative-working **resist** compositions for processing with electron beam or x-ray

INVENTOR(S): Takahashi, Omote; Shirakawa, Hiroshi; Adegawa, Yutaka
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003005356	A2	20030108	JP 2001-186786	20010620

PRIORITY APPLN. INFO.: JP 2001-186786 20010620
OTHER SOURCE(S): MARPAT 138:98186
GI



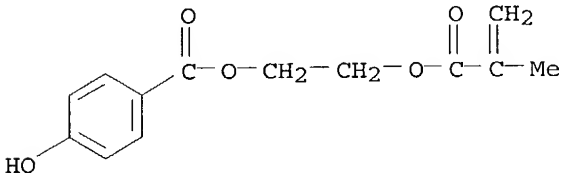
AB The compns. comprise (A) compds. generating acids on irradiation with electron beam or x-ray, (B) polymers soluble in aqueous alkaline solns., and (D) ≥1 compds. selected from heterocycles defined by 9 Markush structures such as I, II, III, IV, V, VI, and VII (R11 = H, aliphatic, aromatic, mixed, or heterocyclic amine, amide, imide, ester, halo, halogen substituted alkyl or aryl, OH, carboxyl, thiol, cyano, nitro, formyl, sulfonyl, sulfonamide, acyl, aroyl, alkyl, alkyloxy, alkenyloxy, heterocyclic, aryl, alkenyl, aralkyl; R12 = H, aromatic or heterocyclic amine, halogen-substituted alkyl or aryl, OH, acyl, aroyl, alkyl, alkyloxy, alkenyloxy, heterocyclic, aryl, alkenyl, aralkyl, ester, carbonate ester). The **resists** have excellent stability against post exposure bake. **Resists** with high resolution and excellent profiles are obtained.
IT **349647-07-0P**, **Acrylonitrile**-2-hydroxyethyl **acrylate**-2-[(4'-hydroxyphenyl)carbonyloxy]ethyl methacrylate

copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

RN 349647-07-0 CAPLUS
CN Benzoic acid, 4-hydroxy-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester, polymer with 2-hydroxyethyl 2-propenoate and 2-propenenitrile (9CI) (CA INDEX NAME)

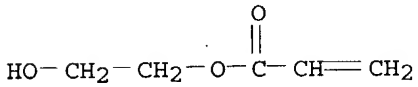
CM 1

CRN 34573-66-5
CMF C13 H14 O5



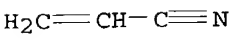
CM 2

CRN 818-61-1
CMF C5 H8 O3



CM 3

CRN 107-13-1
CMF C3 H3 N



IC ICM G03F007-004
ICS H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 28

ST **chem amplified** neg working photoresist electron beam; x ray neg working photoresist; triazole additive neg working photoresist; heterocyclic additive neg working photoresist

IT Negative **photoresists**
(**chemical-amplified**; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 130501-59-6P, 4-Hydroxystyrene homopolymer acetate 173786-80-6DP, 4-Acetoxystyrene-4-methoxystyrene **copolymer**, hydrolyzed **349647-07-0P**, **Acrylonitrile**-2-hydroxyethyl **acrylate**-2-[(4'-hydroxyphenyl)carbonyloxy]ethyl methacrylate **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 110726-28-8, 1-[α-Methyl-α-(4-hydroxyphenyl)ethyl]-4-[α,α-bis(4-hydroxyphenyl)ethyl]benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(**chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 92-71-7 1806-34-4 3073-87-8 3147-75-9 3864-99-1 4184-79-6 7128-64-5 17472-96-7 24979-69-9 24979-70-2 24979-74-6 24980-18-5 28539-02-8, 1H-Benzotriazole-1-methanol 148044-19-3 149614-53-9 150405-69-9 321164-59-4 345212-27-3 396098-38-7 477705-24-1 482654-95-5 482654-96-6 482654-97-7 482654-98-8 482654-99-9 482655-00-5 482655-01-6
RL: TEM (Technical or engineered material use); USES (Uses)
(**chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 162846-57-3P
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); **PREP (Preparation)**; RACT (Reactant or reagent); USES (Uses)
(crosslinking agent; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 161679-94-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(crosslinking agent; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
RL: TEM (Technical or engineered material use); USES (Uses)
(crosslinking agent; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

IT 39153-56-5 138529-81-4 138529-84-7 241806-75-7 241806-76-8
258341-99-0 258872-05-8 312386-77-9 338445-31-1 341548-86-5
343629-51-6 437652-80-7 437652-81-8 482636-20-4
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; **chemical-amplified** neg.-working **resist** compns. containing heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

L26 ANSWER 16 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:921380 CAPLUS
DOCUMENT NUMBER: 138:18052
TITLE: Alkenylphenol-based **copolymers** bearing acid-sensitive segments and selectively protected hydroxy-containing segments for **chemically amplified resists** and their preparation
INVENTOR(S): Nobuhara, Yukikazu; Kobayashi, Asami
PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002348328	A2	20021204	JP 2001-154614	20010523

PRIORITY APPLN. INFO.: JP 2001-154614 20010523
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The **copolymers** involve mer units represented by CH2CR1[C6H4OCR2R3(OR4)] [I; R1 = H, Me; R2 = H, C1-3 alkyl; R3 = H, C1-6 alkyl, C1-6 alkoxy; R4 = open-chain or branched chain-containing C1-20 alkyl, C5-10 cycloalkyl, (substituted) C6-20 aryl; R2 and R3, or R2 and R4 may form ring together], CH2CR5(C6H4OR6) (II; R5 = H, Me; R6 = acetal or ketal structure-free group which is dissociated or decomposed in acidic condition), and III (l, m, n = 1, 2; R7 = H, Me; R8 = H, open-chain or branched chain-containing C1-4 alkyl; R21-R30 = H, C1-15 hydrocarbyl which may contain hetero atom, C1-15 hydrocarbylene which may contain hetero atom. or hetero atom. which may be bonded to each other and form ring; R8, R21 and R22, R23-R26, or R27 and R28 when n = 2, adjacent C may be directly bonded to each other and may form double bond). III may be adamantyl (meth) **acrylate**-derived units. The **copolymers** are prepared by anionic polymerization of styrene derivs. giving mer units I, compds. giving mer
units II, and compds. giving mer units III. The **copolymers** are

treated with weak acids, preferably aqueous H2SO4, for selective removal of protection groups for acetal structures and to give **copolymers** bearing OH-containing segments, acetal structure-containing segments, and **acrylic** derivative segments bearing acid-sensitive esters.

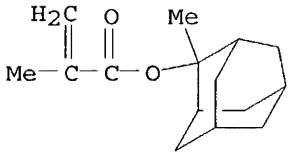
IT **477205-37-1P**, p-tert-Butoxystyrene-p-(1-ethoxyethoxy)styrene-2-methyladamantyl methacrylate **copolymer**
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(alkenylphenol-based **copolymers** prepared by anionic polymerization and their acid treatment for selective deprotection for **chemical amplified resists**)

RN 477205-37-1 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

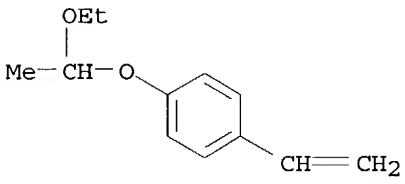
CM 1

CRN 177080-67-0
CMF C15 H22 O2



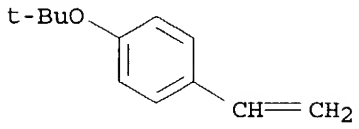
CM 2

CRN 157057-20-0
CMF C12 H16 O2



CM 3

CRN 95418-58-9
CMF C12 H16 O



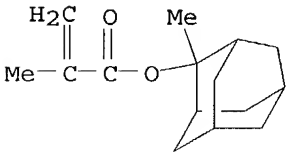
IT **477205-37-1DP**, hydrolyzed
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(alkenylphenol-based **copolymers** prepared by anionic polymerization and their acid treatment for selective deprotection for **chemical amplified resists**)

RN 477205-37-1 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

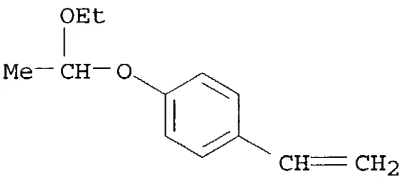
CM 1

CRN 177080-67-0
CMF C15 H22 O2



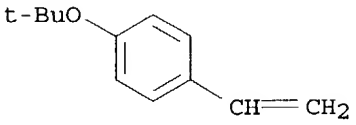
CM 2

CRN 157057-20-0
CMF C12 H16 O2



CM 3

CRN 95418-58-9
CMF C12 H16 O



IC ICM C08F212-14
ICS C08F008-12; C08F220-12; C08F297-02; G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 38
ST **chem amplified resist** alkenylphenol **copolymer**; alkenylphenol hydroxystyrene adamantyl methacrylate **copolymer resist**; acetal alkenylphenol **chem amplified resist**; anionic polymn alkenylphenol **copolymer** structure control **resist**; tertiary butoxystyrene hydroxystyrene methyladamantyl methacrylate **copolymer resist**; acid labile group acetal selective removal **resist**
IT **Photoresists**
Resists
(**chemical-amplified**; alkenylphenol-based **copolymers** prepared by anionic polymerization and their acid treatment for selective deprotection for **chemical amplified resists**)
IT **477205-37-1P**, p-tert-Butoxystyrene-p-(1-ethoxyethoxy)styrene-2-methyladamantyl methacrylate **copolymer**
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(alkenylphenol-based **copolymers** prepared by anionic polymerization and their acid treatment for selective deprotection for **chemical amplified resists**)
IT **477205-37-1DP**, hydrolyzed
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(alkenylphenol-based **copolymers** prepared by anionic polymerization and their acid treatment for selective deprotection for **chemical amplified resists**)

L26 ANSWER 17 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:799428 CAPLUS
DOCUMENT NUMBER: 139:76209
TITLE: Synergic effect of acetal-based resin by blending with poly[4-hydroxystyrene-co-tert-butyl **acrylate** -co-4-(3-cyano-1,5-di-tert-butyl carbonylpentylstyrene (P(HS-TBA-CBPS)) on the profiles of 248 nm **chemically amplified resist**
AUTHOR(S): Kim, Hyun-Jin; Chung, Yoon-Sik; Lee, Dong Hwal; Cho, Sook Hee; Im, Kwang Hwyi; Yim, Yun-Gill; Kim, Deog-Bae; Kim, Jae-Hyun
CORPORATE SOURCE: Electron. Mater. Div., DongJin Semichem Co., Ltd.,

Kwasung-Kun Kyungki-do, 445-930, S. Korea
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2002), 4690(Pt. 2, Advances in Resist Technology and Processing XIX), 651-659
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English

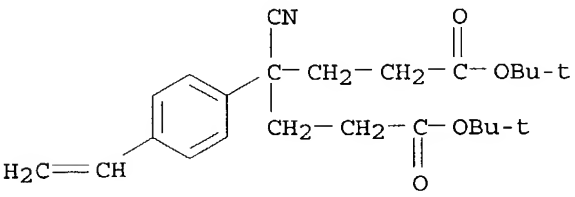
AB The authors prepared terpolymer of p-hydroxystyrene, tert-Bu **acrylate** and 4-(3-cyano-1,5-di-tert-butylcarbonylpentylstyrene) (P(HS-TBA-CBPS)) and discussed a characteristic of prepared polymer. As TBA, newly introduced monomer increases, contrast of **resist** is improved. And the prepared polymer was blended with poly(4-hydroxystyrene-co-4-(1-ethylethoxystyrene)) (EE-PHS). The synergic effect on a **resist** performance in KrF lithog. by the combination of high and low activation energy system was shown. A **resist** using blending polymer was shown a good performance on resolution and LER (line edge roughness) than **resist** using polymer sep. Based on the results, it was found that high performance KrF **resist** could be obtained by optimization of polymer blending.

IT **328238-42-2P**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(lithog. properties of deep-UV **chemical amplification** photoresist containing polymer blend of hydroxystyrene terpolymer and hydroxystyrene **copolymer**)

RN 328238-42-2 CAPLUS
CN Heptanedioic acid, 4-cyano-4-(4-ethenylphenyl)-, bis(1,1-dimethylethyl) ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenol (9CI) (CA INDEX NAME)

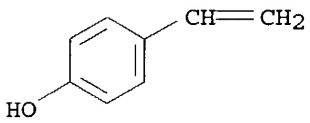
CM 1

CRN 328238-41-1
CMF C24 H33 N O4



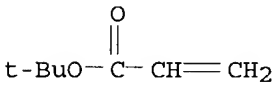
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST deep UV lithog **chem amplification** photoresist polymer blend; hydroxystyrene tertbutyl **acrylate** cyanotertbutylcarbonylpentylstyrene terpolymer blend ethylethoxystyrene **copolymer**

IT **Photoresists**
(deep-UV, **chemical amplification**; lithog. properties of **chemical amplification** photoresist for KrF lithog. containing polymer blend of hydroxystyrene terpolymer and hydroxystyrene **copolymer**)

IT Polymer blends
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(lithog. properties of deep-UV **chemical amplification** photoresist containing polymer blend of hydroxystyrene terpolymer and hydroxystyrene **copolymer**)

IT Polydispersity
Polymerization
(polymerization reaction in synthesis of terpolymer for use in deep-UV **chemical amplification** photoresist based on polymer blend)

IT 84540-57-8, Propylene glycol monomethyl ether acetate
RL: NUU (Other use, unclassified); USES (Uses)
(casting solvent; lithog. properties of deep-UV **chemical amplification** photoresist containing polymer blend of hydroxystyrene terpolymer and hydroxystyrene **copolymer**)

IT 75-59-2, Tetramethylammonium hydroxide
RL: NUU (Other use, unclassified); USES (Uses)
(developer; lithog. properties of deep-UV **chemical amplification** photoresist containing polymer blend of hydroxystyrene terpolymer and hydroxystyrene **copolymer**)

IT 24979-70-2DP, 4-Hydroxystyrene homopolymer, reaction product with Et vinyl ether **328238-42-2P**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(lithog. properties of deep-UV **chemical amplification** photoresist containing polymer blend of hydroxystyrene terpolymer and hydroxystyrene **copolymer**)

IT 1663-39-4, Tert-Butyl **acrylate** 2628-16-2, 4-Acetoxystyrene 328238-41-1
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(polymerization reaction in synthesis of terpolymer for use in deep-UV **chemical amplification** photoresist based on polymer blend)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 18 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:759254 CAPLUS
DOCUMENT NUMBER: 138:114952
TITLE: Positive **resist** for KrF excimer laser lithography
AUTHOR(S): Park, S. J.; Kim, I. H.; Kang, Y. J.; Lee, H.; Lee, S. H.; Choi, S. J.
CORPORATE SOURCE: Department of Chemistry, Hanyang University, Seoul, 133-791, S. Korea
SOURCE: Journal of Vacuum Science & Technology, B: Microelectronics and Nanometer Structures (2002), 20(5), 2108-2112
CODEN: JVTBD9; ISSN: 0734-211X
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In order to develop a new pos.-tone, **chemical amplified** photoresist for 248 nm lithog., a **copolymer** containing **acrylic** silicon moiety was synthesized. The **copolymer** of 1,3-bis(trimethylsilyl)isopropyl methacrylate and 4-hydroxystyrene was prepared by free radical polymerization The polymer structure, properties and acid catalyzed deprotection were evaluated by 1H NMR, Fourier transform IR, UV, thermogravimetric anal. and gel permeation chromatog. This polymer is thermally stable up to 150 ° and is suitably transparent at the KrF laser output wavelength (248 nm). The lithog. evaluation shows the capability of 0.28 μm resolution using a KrF excimer laser stepper.

IT **313484-48-9P**, 4-Hydroxystyrene-1,3-Bis(trimethylsilyl)isopropyl methacrylate **copolymer**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(structure and properties and lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate

copolymer as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

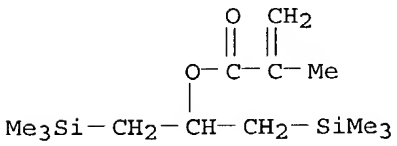
RN 313484-48-9 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(trimethylsilyl)-1-[(trimethylsilyl)methyl]ethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 195044-28-1

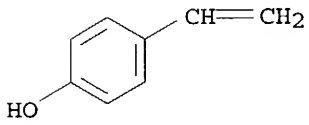
CMF C13 H28 O2 Si2



CM 2

CRN 2628-17-3

CMF C8 H8 O



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST hydroxystyrene trimethylsilylisopropyl methacrylate **copolymer** pos **chem amplified** photoresist lithog; deep UV photolithog hydroxystyrene trimethylsilylisopropyl methacrylate **copolymer** amplified photoresist

IT Positive **photoresists**
(**chemical amplified**; lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

IT UV and visible spectra
(photoacid generator; structure and properties and lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

IT Polymerization
(radical; preparation and structure and lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate

copolymer as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

IT IR spectra
Thermal stability
(structure and properties and lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

IT 17891-78-0
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(acid-catalyzed deprotection mechanism of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** photoresist)

IT 75-59-2, Tetramethylammonium hydroxide
RL: NUU (Other use, unclassified); USES (Uses)
(developer; lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

IT 66003-78-9, Triphenylsulfonium triflate
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

IT 78-67-1, AIBN
RL: CAT (Catalyst use); USES (Uses)
(preparation and structure and lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

IT 2628-17-3, 4-Hydroxystyrene 195044-28-1, 1,3-Bis(trimethylsilyl)isopropyl methacrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and structure and lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

IT **313484-48-9P**, 4-Hydroxystyrene-1,3-Bis(trimethylsilyl)isopropyl methacrylate **copolymer**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(structure and properties and lithog. evaluation of hydroxystyrene-bis(trimethylsilyl)isopropyl methacrylate **copolymer** as pos.-tone **chemical amplified** photoresist for 248 nm exposures)

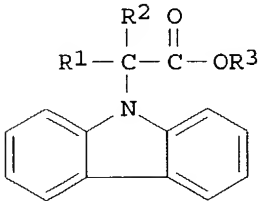
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 19 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:693159 CAPLUS
DOCUMENT NUMBER: 137:202096
TITLE: Carbazole derivative and **chemically amplified** radiation-sensitive resin composition
INVENTOR(S): Nagai, Tomoki; Numata, Jun; Kusumoto, Shirou; Kobayashi, Eiichi
PATENT ASSIGNEE(S): JSR Corporation, Japan
SOURCE: Eur. Pat. Appl., 48 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1238972	A1	20020911	EP 2002-4937	20020305
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2002265446	A2	20020918	JP 2001-61922	20010306
US 2002172885	A1	20021121	US 2002-87735	20020305

PRIORITY APPLN. INFO.: JP 2001-61922 A 20010306
OTHER SOURCE(S): MARPAT 137:202096
GI



I

AB A carbazole derivative I, wherein R1 and R2 individually represent a hydrogen atom or a monovalent organic group, or R1 and R2 form, together with the carbon atom to which R1 and R2 bond, a divalent organic group having a 3-8 member carbocyclic structure or a 3-8 member heterocyclic structure, and R3 represents a hydrogen atom or a monovalent organic group, is suitable as an additive for increasing sensitivity of a **chemical amplified resist.** A **chemical amplified** radiation-sensitive resin composition (e.g., a p-hydroxystyrene polymer), useful as a **chemical amplified resist,** comprising the carbazole derivative is also disclosed. I (R1, R2, R3 = H) was prepared from carbazole and bromoacetic acid.

IT **221549-67-3DP**, p-Acetoxystyrene-tert-butyl **acrylate** -styrene **copolymer**, hydrolyzed, reaction products with unsatd ethers
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered

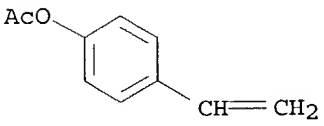
material use); **PREP (Preparation)**; USES (Uses)
(carbazole derivative and **chemical amplified** radiation-sensitive resin composition)

RN 221549-67-3 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

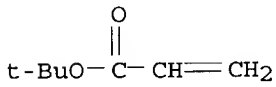
CM 1

CRN 2628-16-2
CMF C10 H10 O2



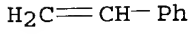
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8



IC ICM C07D209-86
ICS G03F007-038; C08L025-18; C08F012-24; C08F008-02

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 74

ST carbazole deriv additive photoresist

IT **Photoresists**
(carbazole derivative and **chemical amplified** radiation-sensitive resin composition)

IT 524-80-1P, 9H-Carbazole-9-acetic acid 454470-51-0P 454470-52-1P
454470-53-2P 454470-54-3P 454470-55-4P 454470-57-6P 454470-62-3P
RL: **IMF (Industrial manufacture)**; **PREP (Preparation)**

(carbazole derivative and **chemical amplified** radiation-sensitive resin composition)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with poly(p-hydroxystyrene) 928-55-2DP, Ethyl-1-propenyl ether, reaction products with poly(p-hydroxystyrene) 34619-03-9DP, Di-tert-butyl carbonate, reaction products with poly(p-hydroxystyrene) 95418-60-3DP, Poly(p-tert-butoxystyrene), hydrolyzed, reaction products with unsatd ethers **221549-67-3DP**, p-Acetoxystyrene-tert-butyl **acrylate**-styrene **copolymer**, hydrolyzed, reaction products with unsatd ethers 406198-64-9DP, hydrolyzed, reaction products with unsatd ethers 454470-63-4DP, hydrolyzed, reaction products with unsatd ethers 454470-64-5DP, hydrolyzed, reaction products with unsatd ethers
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(carbazole derivative and **chemical amplified** radiation-sensitive resin composition)

IT 79-08-3, Bromoacetic acid 86-74-8, Carbazole 5437-45-6, Benzyl bromoacetate 6289-39-0, Cyclohexyl bromoacetate 29921-57-1, Isopropyl bromoacetate 39149-80-9, tert-Butyl 2-bromopropionate 60277-70-5 454470-59-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(carbazole derivative and **chemical amplified** radiation-sensitive resin composition)

IT 24979-70-2D, Poly(p-hydroxystyrene), acid-dissociable group-substituted 24979-74-6D, p-Hydroxy styrene-styrene **copolymer**, acid-dissociable group-substituted 126141-08-0D, acid-dissociable group-substituted
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(radiation-sensitive resin; carbazole derivative and **chemical amplified** radiation-sensitive resin composition)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 20 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:674636 CAPLUS
DOCUMENT NUMBER: 137:224109
TITLE: Non-**chemically amplified** water and aqueous base developable negative photoresist
INVENTOR(S): Angelopoulos, Marie; Babich, Edward D.; Babich, Inna V.; Babich, Katherina E.; Bucchignano, James J.; Petrillo, Karen E.; Rishton, Steven A.
PATENT ASSIGNEE(S): International Business Machines Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 2002123010	A1	20020905	US 2001-796445	20010302
US 6617086	B2	20030909		
US 6251569	B1	20010626	US 1999-373555	19990813

PRIORITY APPLN. INFO.: US 1999-373555 A3 19990813

AB A new group of non-**chemical amplified** neg. tone water/aqueous base developable (photo) **resists** based on redistribution of carbon-oxygen bonds in pendant ester groups of the polymers has been found. The compns. according to the present invention do not require any addnl. photocatalysts, photoinitiators or added crosslinking agents.

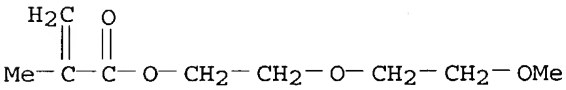
IT **454716-57-5P**, p-Hydroxystyrene-methoxyethoxyethyl methacrylate **copolymer**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(non-**chemical amplified** water and aqueous base developable neg. photoresist)

RN 454716-57-5 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(2-methoxyethoxy)ethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

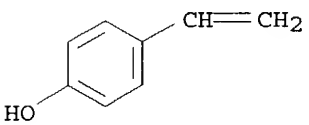
CM 1

CRN 45103-58-0
CMF C9 H16 O4



CM 2

CRN 2628-17-3
CMF C8 H8 O



IT **454716-59-7P**, p-Acetoxystyrene-methoxyethoxyethyl methacrylate **copolymer** **454716-60-0P**, p-Hydroxyphenyl methacrylamide-methoxyethoxyethyl methacrylate **copolymer** **454716-65-5P**, Methacrylic acid-phenoxyethyl methacrylate **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

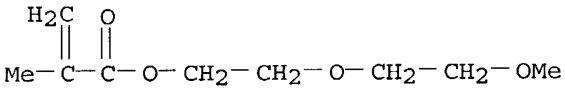
(non-**chemical amplified** water and aqueous base developable neg. photoresist)

RN 454716-59-7 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(2-methoxyethoxy)ethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

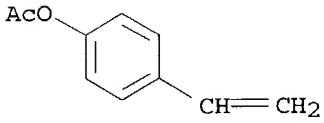
CM 1

CRN 45103-58-0
CMF C9 H16 O4



CM 2

CRN 2628-16-2
CMF C10 H10 O2

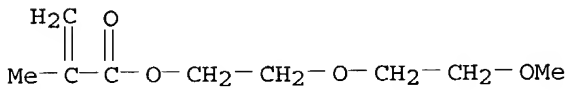


RN 454716-60-0 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(2-methoxyethoxy)ethyl ester, polymer with N-(4-hydroxyphenyl)-2-methyl-2-propenamide (9CI) (CA INDEX NAME)

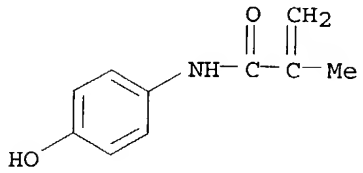
CM 1

CRN 45103-58-0
CMF C9 H16 O4



CM 2

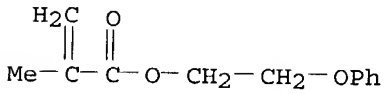
CRN 19243-95-9
CMF C10 H11 N O2



RN 454716-65-5 CAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with 2-phenoxyethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

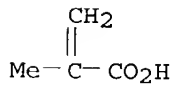
CM 1

CRN 10595-06-9
CMF C12 H14 O3



CM 2

CRN 79-41-4
CMF C4 H6 O2



IC ICM G03F007-004
ICS G03F007-30
NCL 430325000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST water aq base developable neg photoresist
IT Negative **photoresists**
(non-**chemical amplified** water and aqueous base developable neg. photoresist)
IT **454716-57-5P**, p-Hydroxystyrene-methoxyethoxyethyl methacrylate **copolymer**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(non-**chemical amplified** water and aqueous base developable neg. photoresist)

IT 61412-60-0P, Poly(methoxyethoxyethyl methacrylate) 130425-25-1P, Methoxyethoxyethyl methacrylate-methyl methacrylate **copolymer** 454716-52-0P, 4-Methacryloyloxyethyl trimellitic anhydride-methoxyethoxyethyl methacrylate-tetrahydrofurfuryl methacrylate **copolymer** 454716-53-1P, Methoxyethoxyethyl methacrylate-4-methacryloyloxyethyl trimellitic anhydride **copolymer** 454716-54-2P, Methacrylic acid-methoxyethoxyethyl methacrylate **copolymer** 454716-55-3P, Methoxyethoxyethyl methacrylate-2-**acrylamido**-2-methyl-1-propanesulfonic acid **copolymer** 454716-56-4P, Methoxyethoxyethyl methacrylate-4-methacryloyloxyethyl trimellitic anhydride-dicyclopentenyl methacrylate **copolymer** 454716-57-5DP, hydrolyzed derivs. 454716-58-6P, Methoxyethoxyethyl methacrylate-styrene **copolymer** **454716-59-7P**, p-Acetoxystyrene-methoxyethoxyethyl methacrylate **copolymer** **454716-60-0P**, p-Hydroxyphenyl methacrylamide-methoxyethoxyethyl methacrylate **copolymer** 454716-61-1P, 2-Bromoethyl methacrylate-methoxyethoxyethyl methacrylate **copolymer** 454716-62-2P, 1-Adamantyl methacrylate-Methoxyethoxyethyl methacrylate **copolymer** 454716-63-3P, Methoxyethoxyethyl methacrylate-norbornene-maleic anhydride-methacrylic acid **copolymer** 454716-64-4P, Methoxyethoxyethyl methacrylate-tris(trimethylsiloxy)silylpropyl methacrylate **copolymer** **454716-65-5P**, Methacrylic acid-phenoxyethyl methacrylate **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(non-**chemical amplified** water and aqueous base developable neg. photoresist)

IT 454716-66-6, Methoxyethoxyethyl methacrylate-norbornene **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(non-**chemical amplified** water and aqueous base developable neg. photoresist)

L26 ANSWER 21 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:642506 CAPLUS
DOCUMENT NUMBER: 137:317797
TITLE: High-performance **resist** materials for ArF excimer laser and electron-beam lithography
AUTHOR(S): Nozaki, Koji; Yano, Ei
CORPORATE SOURCE: Chemical Society of Japan, Japan
SOURCE: Fujitsu Scientific & Technical Journal (2002), 38(1), 3-12
CODEN: FUSTA4; ISSN: 0016-2523
PUBLISHER: Fujitsu Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB High-performance **resist** materials for ArF (argon fluoride) excimer laser (λ = 193 nm) and electron-beam (EB) lithog. for fabricating 100 nm-level and beyond ULSIs have been developed. For the base polymers of the ArF **resists**, a novel methacrylate was employed as a base polymer whose ester groups have chromophores with a low extinction coefficient at 193 nm. A polycyclic hydrocarbon substituent, called

adamantyl, and lactone substituents were introduced for acid-labile ester groups in the methacrylate polymer. The alicyclic group provides superior sensitivity, resolution, and dry-etch **resistance**, while the lactone groups afford compatibility with a standard TMAH (tetramethylammonium hydroxide) developer, good resolution, and adhesion to Si substrates. For the base polymer of the EB **resist**, the above-mentioned adamantyl methacrylate unit was applied in a vinylphenol **copolymer.** By optimizing the compns. of these **resists** and the process conditions, the authors achieved a 100 nm line and space pattern by ArF excimer laser lithog. and a 59 nm hole pattern by EB lithog.

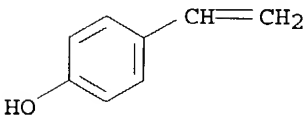
IT **159296-87-4**, tert-Butyl **acrylate**-p-vinylphenol **copolymer**
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(comparison; imaging property of **resists** for electron-beam lithog. containing **copolymer** of vinylphenol and methacrylate monomer with adamantyl- or lactone substituents)

RN 159296-87-4 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

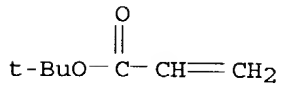
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IT **186585-53-5P**, p-Hydroxystyrene-2-Methyl-2-adamantyl methacrylate **copolymer** **301153-46-8P**, 2-Ethyl-2-adamantyl methacrylate-p-hydroxystyrene **copolymer**
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(imaging property of **resists** for electron-beam lithog. containing **copolymer** of vinylphenol and methacrylate monomer with

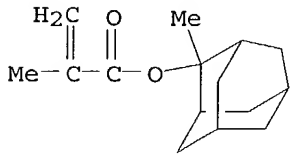
adamantyl- or lactone substituents)

RN 186585-53-5 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

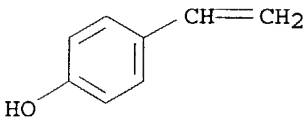
CM 1

CRN 177080-67-0
CMF C15 H22 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O

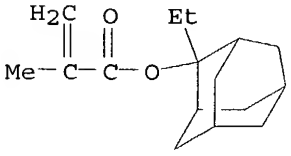


RN 301153-46-8 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

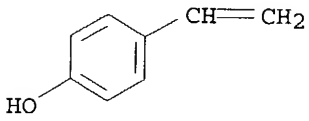
CRN 209982-56-9
CMF C16 H24 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **resist** electron beam lithog vinylphenol adamantyl methacrylate **copolymer**; vacuum UV lithog photoresist alicyclic group contg methacrylate polymer; lactone adamantyl methacrylate **copolymer**

IT Electron beam **resists**
(**chemical-amplified**; imaging property of **resists** for electron-beam lithog. containing **copolymer** of vinylphenol and methacrylate monomer with adamantyl- or lactone substituents)

IT Etching
(plasma; imaging property of **photoresists** for vacuum-UV lithog. containing methacrylate **copolymer** with adamantyl- and lactone substituents)

IT Glass transition temperature
(properties and preliminary imaging characteristics of methacrylate **copolymers** with adamantyl- or lactone substituents in relation to to photoresist application)

IT Absorptivity
(**resist** materials for ArF excimer laser- and electron-beam lithog. based on **copolymer** containing methacrylate monomers with adamantyl- or lactone substituents)

IT Etching
(sputter, ion-beam, reactive; dry-etch rates of **resists** for electron-beam lithog. containing **copolymer** of vinylphenol and methacrylate monomer with adamantyl- or lactone substituents)

IT **Photoresists**
(vacuum-UV, **chemical-amplified**; imaging property of **photoresists** for vacuum-UV lithog. containing methacrylate **copolymer** with adamantyl- and lactone substituents)

IT **159296-87-4**, tert-Butyl **acrylate**-p-vinylphenol **copolymer**
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(comparison; imaging property of **resists** for electron-beam lithog. containing **copolymer** of vinylphenol and methacrylate monomer with adamantyl- or lactone substituents)

IT 75-59-2, Tetramethylammonium hydroxide
RL: NUU (Other use, unclassified); USES (Uses)
(developer; **resist** materials for ArF excimer laser- and electron-beam lithog. based on **copolymer** containing methacrylate monomers with adamantyl- or lactone substituents)

IT 177080-68-1P, 2-Methyl-2-adamantyl methacrylate-mevalonic lactone

methacrylate **copolymer**
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(imaging property of **chemical amplified photoresists** for vacuum-UV lithog. containing methacrylate **copolymer** with adamantyl- and lactone substituents)

IT **186585-53-5P**, p-Hydroxystyrene-2-Methyl-2-adamantyl methacrylate **copolymer** **301153-46-8P**, 2-Ethyl-2-adamantyl methacrylate-p-hydroxystyrene **copolymer**
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(imaging property of **resists** for electron-beam lithog. containing **copolymer** of vinylphenol and methacrylate monomer with adamantyl- or lactone substituents)

IT 66003-78-9, Triphenylsulfonium triflate
RL: NUU (Other use, unclassified); USES (Uses)
(photoacid generator; **resist** materials for ArF excimer laser- and electron-beam lithog. based on **copolymer** containing methacrylate monomers with adamantyl- or lactone substituents)

IT 75-73-0, Carbon tetrafluoride 7440-37-1, Argon, uses 7782-50-5, Chlorine, uses
RL: NUU (Other use, unclassified); USES (Uses)
(plasma etch; dry etch **resistance** of **photoresists** for vacuum-UV lithog. containing methacrylate **copolymer** with adamantyl- and lactone substituents)

IT 177080-66-9P, Mevalonic lactone methacrylate 177080-67-0P, 2-Methyl-2-adamantyl methacrylate 209982-56-9P, 2-Ethyl-2-adamantyl methacrylate
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of base polymers of **resists** for ArF excimer laser- and electron-beam lithog.)

IT 181020-28-0, Mevalonic lactone methacrylate homopolymer 181020-29-1, Poly(2-Methyl-2-adamantyl methacrylate)
RL: PRP (Properties)
(properties and preliminary imaging characteristics of methacrylate **copolymers** with adamantyl- or lactone substituents in relation to to photoresist application)

IT 96-48-0, Butyrolactone 97-64-3, Ethyl lactate 108-94-1, Cyclohexanone, uses 617-35-6, Ethyl pyruvate
RL: NUU (Other use, unclassified); USES (Uses)
(**resist** solvent; imaging property of **photoresists** for vacuum-UV lithog. containing methacrylate **copolymer** with adamantyl- and lactone substituents)

IT 108-65-6, Propylene glycol-1-methyl ether-2-acetate
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; **resist** materials for ArF excimer laser- and electron-beam lithog. based on **copolymer** containing methacrylate monomers with adamantyl- or lactone substituents)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 22 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:591966 CAPLUS
DOCUMENT NUMBER: 137:147755
TITLE: Polymers and their use in **resists** and pattern formation
INVENTOR(S): Harada, Yuji; Watanabe, Atsushi; Hatakeyama, Jun; Kawai, Yoshio; Sasako, Masaru; Endo, Masataka; Kishimura, Shinji; Otani, Mitsutaka; Miyazawa, Satoru; Tsutsumi, Kentaro; Maeda, Kazuhiko
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.; Central Glass Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002220417	A2	20020809	JP 2001-346959	20011113

PRIORITY APPLN. INFO.: JP 2000-353868 A 20001121

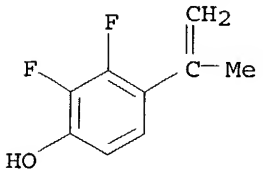
AB The polymers have repeating units of [CR3(C6(R1)a(OR2)bH5-a-b)CR4R5]i and [CR6(CO2R9)CR7R8]j [R1 = F, fluorinated alkyl; R2 = H, acid-unstable group; R3-R8 = H, F, linear, cyclic or branched C1-20 (un)fluorinated alkyl; R9 = acid-unstable group, adhesive group, F-containing high-transparency group; i, j > 0; 0 < a < 5; 0 < b < 5; 0 < a + b ≤ 5]. **Resists** containing the polymers or **chemical-amplified** pos.-working **resists** containing the polymers, organic solvents, acid generators, and optionally basic compds. and/or dissoln. inhibitors, are claimed. A pattern is formed by applying the **resists** on a substrate, heating, exposing with ≤300 nm-high-energy rays or electron beam through a photomask, heating optionally, and developing with a solution The **resists** show high sensitivity to ≤170 nm-energy rays, adhesion to substrate, alkali developability, and resolution

IT **445004-26-2P 445004-29-5P 445004-32-0P**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(fluorinated hydroxystyrene-F-containing **acrylate copolymers** for pos.-working **resists** and pattern formation)

RN 445004-26-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 2,3-difluoro-4-(1-methylethenyl)phenol and 2,2,2-trifluoroethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

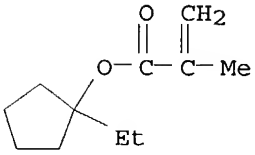
CM 1

CRN 445004-25-1
CMF C9 H8 F2 O



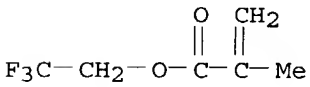
CM 2

CRN 266308-58-1
CMF C11 H18 O2



CM 3

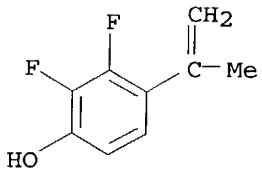
CRN 352-87-4
CMF C6 H7 F3 O2



RN 445004-29-5 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-ethylbicyclo[2.2.1]hept-2-yl ester, polymer with 2,3-difluoro-4-(1-methylethenyl)phenol and 2,2,2-trifluoroethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

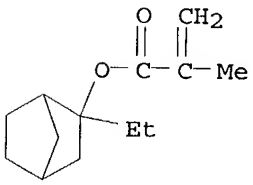
CM 1

CRN 445004-25-1
CMF C9 H8 F2 O



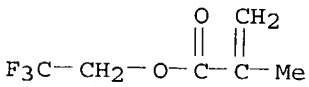
CM 2

CRN 330595-98-7
CMF C13 H20 O2



CM 3

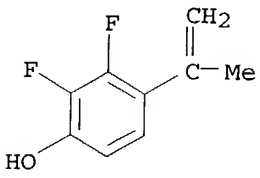
CRN 352-87-4
CMF C6 H7 F3 O2



RN 445004-32-0 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 2,3-difluoro-4-(1-methylethenyl)phenol and 2,2,2-trifluoroethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

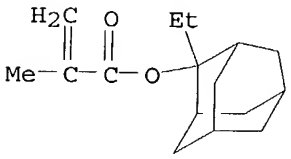
CM 1

CRN 445004-25-1
CMF C9 H8 F2 O



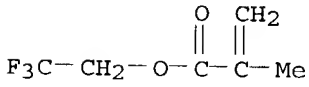
CM 2

CRN 209982-56-9
CMF C16 H24 O2



CM 3

CRN 352-87-4
CMF C6 H7 F3 O2



IC ICM C08F212-12
ICS C08F220-10; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37
ST fluoropolymer **resist** pattern formation high energy ray; **chem amplified** pos working **resist** fluoropolymer; fluorinated hydroxystyrene **acrylate** **copolymer** photoresist
IT Positive **photoresists**
(UV; fluorinated hydroxystyrene-F-containing **acrylate** **copolymers** for pos.-working **resists** and pattern formation)
IT Fluoropolymers, preparation
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**acrylic**; fluorinated hydroxystyrene-F-containing

acrylate copolymers for pos.-working **resists** and pattern formation)

IT **Resists**
(pos.-working radiation-sensitive; fluorinated hydroxystyrene-F-containing **acrylate copolymers** for pos.-working **resists** and pattern formation)

IT Electron beam **resists**
(pos.-working; fluorinated hydroxystyrene-F-containing **acrylate copolymers** for pos.-working **resists** and pattern formation)

IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate
RL: CAT (Catalyst use); USES (Uses)
(acid generator; fluorinated hydroxystyrene-F-containing **acrylate copolymers** for pos.-working **resists** and pattern formation)

IT 139254-88-9
RL: MOA (Modifier or additive use); USES (Uses)
(dissoln. inhibitor; fluorinated hydroxystyrene-F-containing **acrylate copolymers** for pos.-working **resists** and pattern formation)

IT **445004-26-2P 445004-29-5P 445004-32-0P**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(fluorinated hydroxystyrene-F-containing **acrylate copolymers** for pos.-working **resists** and pattern formation)

IT 102-82-9, Tributylamine
RL: MOA (Modifier or additive use); USES (Uses)
(fluorinated hydroxystyrene-F-containing **acrylate copolymers** for pos.-working **resists** and pattern formation)

L26 ANSWER 23 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:447174 CAPLUS
DOCUMENT NUMBER: 137:39321
TITLE: Positively working **resist** composition containing fluoropolymer for high resolution
INVENTOR(S): Adegawa, Yutaka; Tan, Shiro; Sorori, Tadahiro
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 124 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002169295	A2	20020614	JP 2001-272097	20010907

PRIORITY APPLN. INFO.: JP 2000-276896 A 20000912
JP 2000-283963 A 20000919

OTHER SOURCE(S): MARPAT 137:39321

AB The **resist** composition contains (A) (a1) polymers with acid-sensitive alkali solubility, (a2) alkali-soluble polymers and low-mol-weight compds. with acid-sensitive alkali solubility (dissoln. inhibitors), or (a3) polymers with acid-sensitive alkali solubility and dissoln. inhibitors, (B) acid generator sensitive to actinic ray or radiation, and (C) polymers having fluoroaliph. groups in side chains, where the groups are obtained from fluoroaliph. compds. manufactured by telomerization or oligomerization. Also claimed is a **chemical amplified** pos. **resist** composition sensitive to electron beam or x-ray containing (A) acid generator and (B) alkali-soluble polymers with weight-average mol. weight >3000 and ≤300,000 which satisfy the following conditions: (1) the polymers contain ≥1 of repeating unit from monomers containing C6-20 aromatic ring and ethylenically unsatd. group and (2) the aromatic ring has controlled number of π electrons and the substituents of the aromatic ring have controlled number of unshared electron pairs. The **chemical amplified resist** composition has high resolution, high line-width reproducibility, and good pattern profiles.

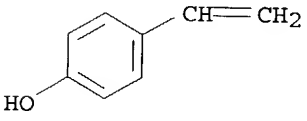
IT **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer** **325143-38-2P**, tert-Butyl **acrylate** -p-(1-ethoxyethoxy)styrene-p-hydroxystyrene **copolymer**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(pos. working **resist** composition containing fluoropolymer for high resolution)

RN 159296-87-4 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

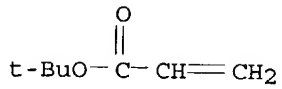
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

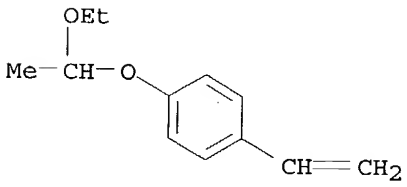
CRN 1663-39-4
CMF C7 H12 O2



RN 325143-38-2 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

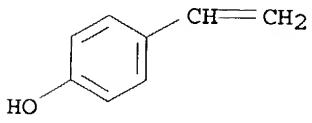
CM 1

CRN 157057-20-0
CMF C12 H16 O2



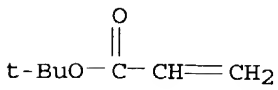
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-039
ICS C08F212-02; G03F007-004; G03F007-033; H01L021-027

KOROMA EIC1700

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST actinic ray radiation sensitive pos **resist** fluoropolymer resoln; electron beam x ray sensitive pos **resist** resoln

IT **Photoresists**
(pos. working **resist** composition containing fluoropolymer for high resolution)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(pos. working **resist** composition containing fluoropolymer for high resolution)

IT **Resists**
(radiation-sensitive; **chemical amplified** pos. **resist** composition sensitive to electron beam or x-ray with high resolution)

IT 153698-46-5P, Triphenylsulfonium pentafluorophenylsulfonate 258341-98-9P
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(acid generator; **chemical amplified** pos. **resist** composition sensitive to electron beam or x-ray with high resolution)

IT 141714-82-1
RL: TEM (Technical or engineered material use); USES (Uses)
(acid generator; **chemical amplified** pos. **resist** composition sensitive to electron beam or x-ray with high resolution)

IT 345212-25-1P
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(alkali-soluble polymer; **chemical amplified** pos. **resist** composition sensitive to electron beam or x-ray with high resolution)

IT 321164-59-4 345212-27-3 345212-28-4 345212-30-8 345212-54-6
345212-55-7 345212-56-8 345212-60-4 345212-61-5 345212-63-7
345212-64-8 345212-67-1 345212-69-3 345212-71-7 345212-73-9
345212-74-0 345212-75-1 345212-77-3 345212-78-4 345212-80-8
345212-82-0 345212-85-3 345212-86-4 345212-87-5 345212-89-7
345212-91-1 345212-92-2 345212-93-3 345212-95-5 345212-97-7
345212-99-9 425422-26-0 425422-30-6 425422-38-4 425422-40-8
436812-25-8 436812-26-9 436812-27-0 436812-28-1 436812-29-2
436812-31-6 436812-32-7 436812-33-8 436812-34-9 436812-35-0
436812-36-1 436812-37-2 436812-38-3 436812-39-4 436812-40-7
436812-41-8 436812-42-9 436812-43-0
RL: TEM (Technical or engineered material use); USES (Uses)
(alkali-soluble polymer; **chemical amplified** pos. **resist** composition sensitive to electron beam or x-ray with high resolution)

IT 3744-08-9P, Triphenylsulfonium iodide 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP**

(**Preparation**); RACT (Reactant or reagent)
(**chemical amplified** pos. **resist** composition
sensitive to electron beam or x-ray with high resolution)

IT 75-59-2, Tetramethylammonium hydroxide 832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl sulfoxide 2049-95-8, tert-Amylbenzene 7758-05-6, Potassium iodate
RL: RCT (Reactant); RACT (Reactant or reagent)
(**chemical amplified** pos. **resist** composition
sensitive to electron beam or x-ray with high resolution)

IT 153698-63-6P 153698-69-2P 196709-88-3P
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(dissoln. inhibitor; pos. working **resist** composition containing fluoropolymer for high resolution)

IT 24979-70-2P, p-Hydroxystyrene homopolymer 24979-74-6P, p-Hydroxystyrene-styrene **copolymer** 129674-22-2P, p-tert-Butoxycarbonyloxystyrene-p-hydroxystyrene **copolymer** **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer** 177034-67-2P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene-styrene **copolymer** 249562-17-2P, Maleic anhydride-2-methyl-2-adamantyl **acrylate**-norbornene **copolymer** 289706-85-0P, p-Acetoxystyrene-p-(1-benzyloxyethoxy)styrene-p-hydroxystyrene **copolymer** **325143-38-2P**, tert-Butyl **acrylate**-p-(1-ethoxyethoxy)styrene-p-hydroxystyrene **copolymer** 436812-24-7P, p-Acetoxystyrene-p-hydroxystyrene-p-(1-phenethylethoxy)styrene **copolymer**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(pos. working **resist** composition containing fluoropolymer for high resolution)

IT 79-10-7D, **Acrylic** acid, fluoroalkyl esters, polymers with (meth) **acrylates** 79-41-4D, Methacrylic acid, fluoroalkyl esters, polymers with (meth)**acrylates** 80-62-6D, Methyl methacrylate, polymers with fluoroalkyl (meth)**acrylates**, 2-hydroxyethyl methacrylate, and iso-Bu methacrylate 97-86-9D, polymers with fluoroalkyl (meth)**acrylates**, Me methacrylate, and 2-hydroxyethyl methacrylate 101-68-8D, polymers with fluoroalkyl (meth) **acrylates**, isocyanates, and diols 110-63-4D, 1,4-Butanediol, polymers with fluoroalkyl (meth)**acrylates**, isocyanates, and diols 142-90-5D, polymers with fluoroalkyl (meth)**acrylates** and 2-Propenamide, N-[4-[[(2,6-dimethylphenyl)amino]sulfonyl]phenyl]- 822-06-0D, 1,6-Hexamethylene diisocyanate, polymers with fluoroalkyl (meth)**acrylates**, isocyanates, and diols 868-77-9D, 2-Hydroxyethyl methacrylate, polymers with fluoroalkyl (meth) **acrylates**, Me methacrylate, and iso-Bu methacrylate 7398-56-3D, polymers with fluoroalkyl (meth)**acrylates**, Me methacrylate, and 2-hydroxyethyl **acrylate** 10097-02-6D, polymers with fluoroalkyl (meth)**acrylates**, isocyanates, and diols 26915-72-0D, polymers with fluoroalkyl (meth)**acrylates** and polypropylene glycol methacrylate Me ether 31958-47-1D, polymers with fluoroalkyl poly[(2-hydroxy-5-methyl-m-phenylene)methylene] derivs. 32171-39-4D,

polymers with fluoroalkyl meth(**acrylates**) 83844-54-6D, polymers with fluoroalkyl (meth)**acrylates** and polyethylene glycol methacrylate Me ether 84836-10-2D, fluoroalkyl derivs., polymer with (meth)**acrylates**, isocyanates, and diols 114654-22-7D, polymers with fluoroalkyl (meth)**acrylates** 206281-34-7, Megafac F 470 232945-66-3, Megafac F 178K 251098-95-0D, polymers with fluoroalkyl (meth)**acrylates** and dodecyl methacrylate 299190-83-3, Megafac F 472 402944-02-9, Megafac F 473 402944-04-1, Megafac F 475 402944-08-5, Megafac F 476
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(pos. working **resist** composition containing fluoropolymer for high resolution)

IT 110-87-2, 3,4-Dihydro-2H-pyran 5292-43-3, tert-Butyl bromoacetate 76937-83-2, α,α,α',α',α'',α''-Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 110726-28-8, 1-[α-Methyl-α-(4'-hydroxyphenyl)ethyl]-4-[α',α'-bis(4''-(hydroxyphenyl))ethyl]benzene 148452-55-5, 1,3,3,5-Tetrakis-(4-hydroxyphenyl)pentane 153698-47-6, Cumyl bromoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(pos. working **resist** composition containing fluoropolymer for high resolution)

L26 ANSWER 24 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:407174 CAPLUS
DOCUMENT NUMBER: 136:409030
TITLE: Radiation-sensitive **chemically amplified** positive **resists** and lithography using the same
INVENTOR(S): Nio, Hiroyuki; Tamura, Kazutaka; Senoo, Masahide
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002156760	A2	20020531	JP 2000-352488	20001120

PRIORITY APPLN. INFO.: JP 2000-352488 20001120

AB The **resists**, showing good sensitivity and high pattern resolution, contain (a) compds. or **acrylate** polymers (Markush given) having carboxyls which are protected with ≥3-aromatic-ring-bearing acid-leaving protective groups and (b) radiation-sensitive acid generators.

IT **383908-14-3P**, p-Hydroxy-α-methylstyrene-trityl α-chloroacrylate **copolymer**
RL: **IMF (Industrial manufacture)**; PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)

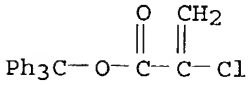
(**chemical amplified** pos. **resists** containing polymers bearing acid-leaving bulky protective groups for electron beam lithog.)

RN 383908-14-3 CAPLUS

CN 2-Propenoic acid, 2-chloro-, triphenylmethyl ester, polymer with 4-(1-methylethenyl)phenol (9CI) (CA INDEX NAME)

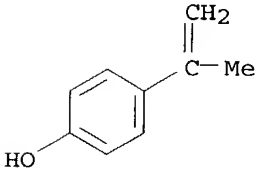
CM 1

CRN 383908-13-2
CMF C22 H17 Cl O2



CM 2

CRN 4286-23-1
CMF C9 H10 O



IC ICM G03F007-039
ICS C08K005-00; C08L033-04; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76

ST electron beam **resist** trityl chloroacrylate polymer; sensitivity resoln photoresist trityl protected polymer

IT **Photoresists**
(UV, i-line; **chemical amplified** pos. **resists** containing polymers bearing acid-leaving bulky protective groups for electron beam lithog.)

IT Photolithography
(UV; **chemical amplified** pos. **resists** containing polymers bearing acid-leaving bulky protective groups for electron beam lithog.)

IT Electron beam lithography
Electron beam **resists**
(**chemical amplified** pos. **resists** containing polymers bearing acid-leaving bulky protective groups for electron beam

lithog.)

IT **Resists**
(radiation-sensitive, pos.; **chemical amplified** pos. **resists** containing polymers bearing acid-leaving bulky protective groups for electron beam lithog.)

IT 66003-78-9, Triphenylsulfonium triflate
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(acid generators; **chemical amplified** pos. **resists** containing polymers bearing acid-leaving bulky protective groups for electron beam lithog.)

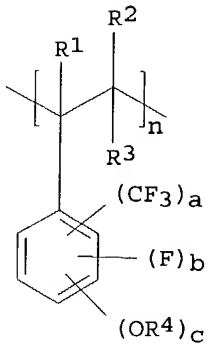
IT **383908-14-3P**, p-Hydroxy-α-methylstyrene-trityl α-chloroacrylate **copolymer**
RL: **IMF (Industrial manufacture)**; PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(**chemical amplified** pos. **resists** containing polymers bearing acid-leaving bulky protective groups for electron beam lithog.)

IT 383908-19-8 383908-20-1 383908-22-3 431943-52-1
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**chemical amplified** pos. **resists** containing polymers bearing acid-leaving bulky protective groups for electron beam lithog.)

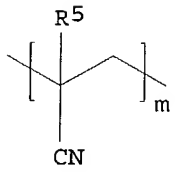
L26 ANSWER 25 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:332604 CAPLUS
DOCUMENT NUMBER: 136:348313
TITLE: **Resist** compositions comprising fluorinated vinyl phenol-**acrylonitrile** resin and patterning process
INVENTOR(S): Hatakeyama, Jun; Harada, Yuji; Watanabe, Jun; Sasago, Masaru; Endo, Masayuki; Kishimura, Shinji
PATENT ASSIGNEE(S): Shin-Etsu Chemical Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SOURCE: U.S. Pat. Appl. Publ., 21 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002051937	A1	20020502	US 2001-947767	20010907
US 6660447	B2	20031209		
JP 2002155115	A2	20020528	JP 2001-266722	20010904

PRIORITY APPLN. INFO.: JP 2000-271189 A 20000907
GI



I



II

AB Disclosed is a polymer having fluorinated vinyl phenol units **copolymd.** with **acrylonitrile** units of the general formula I (R1, R2, R3, R5 = H, F, C1-20-alkyl, C1-20-fluorinated alkyl; R4 = acid labile group; a, b, c are nos. satisfying $0 \leq a < 5$, $0 \leq b < 5$, $0 < a+b < 5$ and $0 < c < 5$; m and n are pos. nos.) that has high transmittance to VUV radiation. A **resist** composition using the polymer of the invention as a base resin has high sensitivity and resolution to high-energy radiation and good plasma etching **resistance** and is suited for lithog. microprocessing.

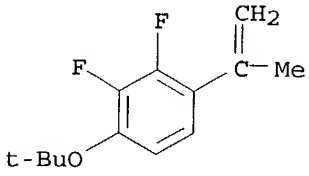
IT **417702-60-4P**, 2,3-Difluoro-4-tert-butoxy-α-methylstyrene-methacrylonitrile **copolymer 417702-62-6P**, 2,3-Difluoro-4-tert-butoxy-α-methylstyrene-4-trifluoromethylstyrene-methacrylonitrile **copolymer 417702-64-8P**, 2,3-Difluoro-4-tert-butoxy-α-methylstyrene-2,3,4,5,6-pentafluorostyrene-methacrylonitrile **copolymer**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**resist** compns. comprising fluorinated vinyl phenol-**acrylonitrile** resin and patterning process)

RN 417702-60-4 CAPLUS

CN 2-Propenenitrile, 2-methyl-, polymer with 1-(1,1-dimethylethoxy)-2,3-difluoro-4-(1-methylethenyl)benzene (9CI) (CA INDEX NAME)

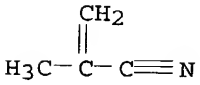
CM 1

CRN 343305-42-0
CMF C13 H16 F2 O



CM 2

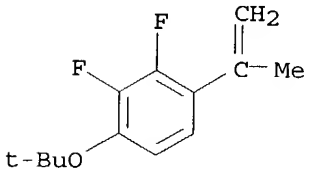
CRN 126-98-7
CMF C4 H5 N



RN 417702-62-6 CAPLUS
CN 2-Propenenitrile, 2-methyl-, polymer with 1-(1,1-dimethylethoxy)-2,3-difluoro-4-(1-methylethenyl)benzene and 1-ethenyl-4-(trifluoromethyl)benzene (9CI) (CA INDEX NAME)

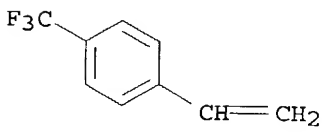
CM 1

CRN 343305-42-0
CMF C13 H16 F2 O



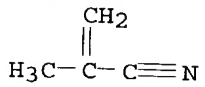
CM 2

CRN 402-50-6
CMF C9 H7 F3



CM 3

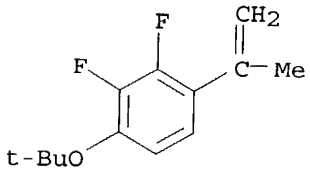
CRN 126-98-7
CMF C4 H5 N



RN 417702-64-8 CAPLUS
CN 2-Propenenitrile, 2-methyl-, polymer with 1-(1,1-dimethylethoxy)-2,3-difluoro-4-(1-methylethenyl)benzene and ethenylpentafluorobenzene (9CI) (CA INDEX NAME)

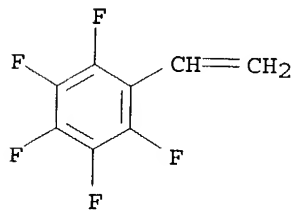
CM 1

CRN 343305-42-0
CMF C13 H16 F2 O



CM 2

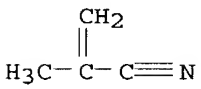
CRN 653-34-9
CMF C8 H3 F5



CM 3

CRN 126-98-7

CMF C4 H5 N



IC ICM G03F007-038
ICS G03F007-20; G03F007-30; G03F007-38; G03F007-40
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 38
ST fluorinated vinyl phenol **acrylonitrile** polymer pos **resist** photoresist UV; **chem amplified** fluorinated vinyl phenol **acrylonitrile** polymer pos photoresist
IT Photolithography
(UV; **resist** compns. comprising fluorinated vinyl phenol-**acrylonitrile** resin and patterning process)
IT Positive **photoresists**
(**chemical amplified**; **resist** compns. comprising fluorinated vinyl phenol-**acrylonitrile** resin and patterning process)
IT **Resists**
(**resist** compns. comprising fluorinated vinyl phenol-**acrylonitrile** resin and patterning process)
IT 405282-93-1P **417702-60-4P**, 2,3-Difluoro-4-tert-butoxy-α-methylstyrene-methacrylonitrile **copolymer 417702-62-6P**, 2,3-Difluoro-4-tert-butoxy-α-methylstyrene-4-trifluoromethylstyrene-methacrylonitrile **copolymer 417702-64-8P**, 2,3-Difluoro-4-tert-butoxy-α-methylstyrene-2,3,4,5,6-pentafluorostyrene-methacrylonitrile **copolymer**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**resist** compns. comprising fluorinated vinyl phenol-**acrylonitrile** resin and patterning process)

L26 ANSWER 26 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:265352 CAPLUS
DOCUMENT NUMBER: 136:316916
TITLE: Positive-working **chemically amplified** photoresist materials containing polymer made of hydroxyvinylanthracene and monomer having modified carboxyl group
INVENTOR(S): Hatakeyama, Jun; Watanabe, Osamu; Takeda, Takanobu
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002107934	A2	20020410	JP 2000-293878	20000927

PRIORITY APPLN. INFO.: JP 2000-293878 20000927

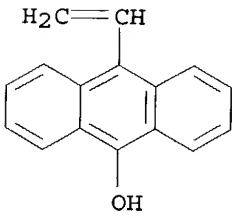
AB The title composition contains a polymer made of hydroxyvinylanthracene and of monomers having carboxyl groups, of which hydroxy hydrogen is substituted with an acid-sensitive group. The photoresist material provides **photoresists** of the fine pattern, the high resolution, and the good dry-etching **resistance.**

IT **409327-73-7P**, 9-Hydroxy-10-Vinylanthracene-tert-butyl **acrylate copolymer 409327-75-9P**, 9-Hydroxy-10-Vinylanthracene-1-ethylcyclopentyl **acrylate copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polymer in pos.-working **chemical amplified** photoresist materials)

RN 409327-73-7 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 10-ethenyl-9-anthracenol (9CI) (CA INDEX NAME)

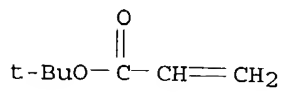
CM 1

CRN 409327-72-6
CMF C16 H12 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



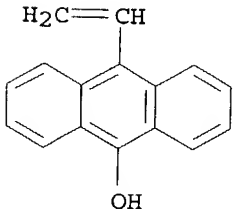
RN 409327-75-9 CAPLUS

KOROMA EIC1700

CN 2-Propenoic acid, 1-ethylcyclopentyl ester, polymer with 10-ethenyl-9-anthracenol (9CI) (CA INDEX NAME)

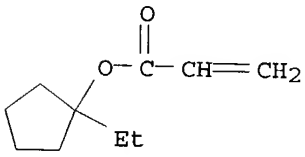
CM 1

CRN 409327-72-6
CMF C16 H12 O



CM 2

CRN 326925-69-3
CMF C10 H16 O2



IC ICM G03F007-039
ICS C08F212-32; C08F220-10; C08F222-10; C08F222-40; C08F232-00; C08K005-00; C08L101-12; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35

ST photoresist polymer hydroxyvinylnaphthalene carboxyl group

IT Light-sensitive materials
Positive **photoresists**
(pos.-working **chemical amplified** photoresist materials containing polymer made of hydroxyvinylnaphthalene and monomer having modified carboxyl group)

IT 109-92-2DP, Ethyl vinyl ether, reaction product with hydroxyaryl polymer **409327-73-7P**, 9-Hydroxy-10-Vinylanthracene-tert-butyl **acrylate copolymer** 409327-75-9DP, reaction product with Et vinyl ether **409327-75-9P**, 9-Hydroxy-10-Vinylanthracene-1-ethylcyclopentyl **acrylate copolymer** 409327-78-2P 409327-80-6P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(polymer in pos.-working **chemical amplified** photoresist materials)

L26 ANSWER 27 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:265351 CAPLUS
DOCUMENT NUMBER: 136:316915
TITLE: Positive-working **chemically amplified** photoresist materials containing polymer made of hydroxyvinylnaphthalene and of monomers having modified carboxyl group
INVENTOR(S): Hatakeyama, Jun; Watanabe, Osamu; Takeda, Takanobu
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002107933	A2	20020410	JP 2000-293749	20000927

PRIORITY APPLN. INFO.: JP 2000-293749 20000927

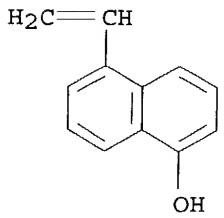
AB The title composition contains a polymer made of hydroxyvinylnaphthalene and monomers having carboxyl group, of which hydroxy hydrogen is substituted with an acid-sensitive group. The photoresist material provides **photoresists** of the fine pattern, the high resolution, and the good dry-etching **resistance.**

IT **409323-06-4P**, 1-Hydroxy-5-vinylnaphthalene/tert-butyl **acrylate copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polymer in pos.-working **chemical amplified** photoresist materials)

RN 409323-06-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 5-ethenyl-1-naphthalenol (9CI) (CA INDEX NAME)

CM 1

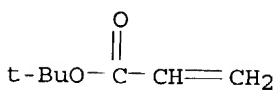
CRN 345212-58-0
CMF C12 H10 O



KOROMA EIC1700

CM 2

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-039
ICS C08F212-14; C08F220-30; C08F222-40; C08F232-00; C08K005-00; C08L025-18; C08L033-14; C08L035-06; C08L045-00; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST photoresist polymer hydroxyvinylnaphthalene carboxyl group
IT Light-sensitive materials
Positive **photoresists**
(pos.-working **chemical amplified** photoresist materials containing polymer made of hydroxyvinylnaphthalene and monomer having modified carboxyl group)
IT **409323-06-4P**, 1-Hydroxy-5-vinylnaphthalene/tert-butyl **acrylate copolymer** 409323-08-6P 409323-10-0P 409323-12-2P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polymer in pos.-working **chemical amplified** photoresist materials)

L26 ANSWER 28 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:251871 CAPLUS
DOCUMENT NUMBER: 136:270596
TITLE: Blends of hydroxystyrene polymers for use in **chemically amplified** positive **resist** formulations
INVENTOR(S): Chen, Kuang-Jung; DellaGuardia, Ronald Anthony; Ito, Hiroshi; Jordhamo, George Michael; Katnani, Ahmad Dauod
PATENT ASSIGNEE(S): International Business Machines Corporation, USA
SOURCE: U.S., 12 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 6365321 B1 20020402 US 1999-291389 19990413
PRIORITY APPLN. INFO.: US 1999-291389 19990413

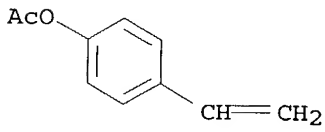
AB A photoresist binder composition comprises a homogeneous blend of (A) a hydroxystyrene **copolymer** comprising a first monomer that is optionally substituted hydroxystyrene and a second monomer containing an acid labile group, preferably pendant to the polymer backbone, and (B) and a phenolic polymer, that is optionally partially or wholly protected, such as polyhydroxystyrene, poly(hydroxystyrene-co-styrene), poly(hydroxystyrene-co-styrene-co-t-Bu **acrylate**), novolac, and the like. Also provided is a lithog. **resist** composition comprising the homogeneous blend of the photoresist binder composition, and a radiation-sensitive acid generator which generates an acid upon exposure to radiation, and a process for using the **resist** composition to generate **resist** images on a substrate, such as in the manufacture of integrated circuits or the like.

IT **174476-25-6DP**, p-Acetoxystyrene-tert-butyl **acrylate** **copolymer**, hydrolyzed
RL: POF (Polymer in formulation); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(blend with hydroxystyrene-styrene **copolymer**; blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations in relation to)

RN 174476-25-6 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

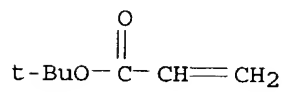
CM 1

CRN 2628-16-2
CMF C10 H10 O2



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IT **174476-25-6P**, p-Acetoxystyrene-tert-butyl **acrylate**

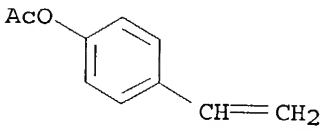
KOROMA EIC1700

copolymer
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations in relation to)

RN 174476-25-6 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

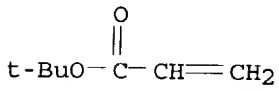
CM 1

CRN 2628-16-2
CMF C10 H10 O2



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-004
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST **chem amplified** photoresist binder hydroxystyrene blend photolithog integrated circuit
IT Phenolic resins, uses
RL: POF (Polymer in formulation); USES (Uses)
(blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations)
IT Polymer blends
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations)
IT Photolithography
(blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations for)

IT Integrated circuits
(blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations in relation to)
IT Positive **photoresists**
(**chemical amplified**; blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations)
IT 24979-74-6, p-Hydroxystyrene-styrene **copolymer**
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(blend with hydrolyzed acetoxystyrene-tert-Bu **acrylate copolymer**; blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations in relation to)
IT **174476-25-6DP**, p-Acetoxystyrene-tert-butyl **acrylate copolymer**, hydrolyzed
RL: POF (Polymer in formulation); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(blend with hydroxystyrene-styrene **copolymer**; blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations in relation to)
IT **174476-25-6P**, p-Acetoxystyrene-tert-butyl **acrylate copolymer**
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations in relation to)
IT 45187-15-3, Perfluorobutanesulfonate 194861-06-8, Di-(tert-butylphenyl)iodonium camphorsulfonate
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations)
IT 97-64-3, Ethyl lactate 763-69-9, Ethyl 3-ethoxypropionate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; blends of hydroxystyrene polymers for use in **chemical amplified** pos. **resist** formulations)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 29 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:185460 CAPLUS
DOCUMENT NUMBER: 136:254547
TITLE: Novel polymers and photoresist compositions comprising electronegative groups
INVENTOR(S): Zampini, Anthony; Szmanda, Charles R.; Cho, Sungseo; Taylor, Gary N.
PATENT ASSIGNEE(S): Shipley Company, L.L.C., USA
SOURCE: PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002021216	A2	20020314	WO 2001-US28018	20010908
WO 2002021216	A3	20021003		
WO 2002021216	C2	20030403		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2001088865	A5	20020322	AU 2001-88865	20010908
US 2002058198	A1	20020516	US 2001-948521	20010908
US 2002058199	A1	20020516	US 2001-948903	20010908

PRIORITY APPLN. INFO.:

US 2000-231274P	P	20000908
US 2000-253118P	P	20001127
WO 2001-US28018	W	20010908

AB The present invention includes polymers and photoresist compns. that comprise the polymers as a resin binder component. **Photoresists** of the invention include **chemical-amplified** pos.-acting **resists** that can be effectively imaged at short wavelengths such as sub-200 nm, particularly 157 nm. Particular polymers and **photoresists** of the invention include at least one electroneg. group that reduces 157 nm absorbance of a wide spectrum of organic groups including aromatic groups such as phenolic moieties.

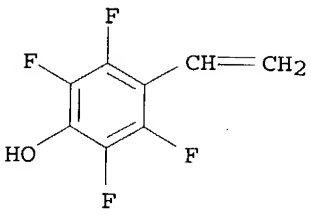
IT **403814-71-1P**, 4-Hydroxy-2,3,5,6-tetrafluorostyrene-isobornyl methacrylate **copolymer 403814-72-2P**, tert-Butylmethacrylate-4-Hydroxy-2,3,5,6-tetrafluorostyrene-pentafluorostyrene **copolymer**
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(novel polymers and photoresist compns. comprising electroneg. groups)

RN 403814-71-1 CAPLUS

CN 2-Propenoic acid, 2-methyl-, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-, polymer with 4-ethenyl-2,3,5,6-tetrafluorophenol (9CI) (CA INDEX NAME)

CM 1

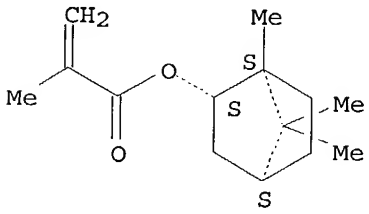
CRN 385422-30-0
CMF C8 H4 F4 O



CM 2

CRN 7534-94-3
CMF C14 H22 O2

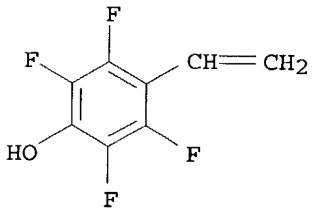
Relative stereochemistry.



RN 403814-72-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethenylpentafluorobenzene and 4-ethenyl-2,3,5,6-tetrafluorophenol (9CI) (CA INDEX NAME)

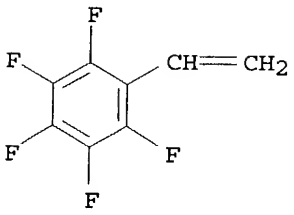
CM 1

CRN 385422-30-0
CMF C8 H4 F4 O



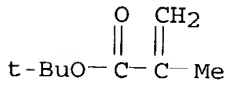
CM 2

CRN 653-34-9
CMF C8 H3 F5



CM 3

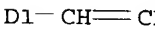
CRN 585-07-9
CMF C8 H14 O2

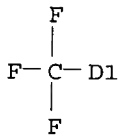


IT **403852-88-0P**, 4-Acetoxystyrene-tert-butyl **acrylate**
-trifluoromethyl styrene **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(novel polymers and photoresist compns. comprising electroneg. groups)
RN 403852-88-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenyl acetate and ethenyl(trifluoromethyl)benzene (9CI) (CA INDEX NAME)

CM 1

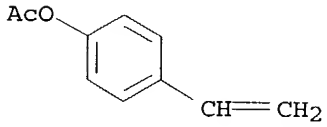
CRN 87176-42-9
CMF C9 H7 F3
CCI IDS





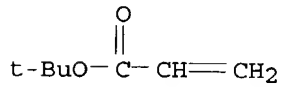
CM 2

CRN 2628-16-2
CMF C10 H10 O2



CM 3

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST photoresist compn electroneg group polymer resin
IT **Photoresists**
(novel polymers and photoresist compns. comprising electroneg. groups)
IT Phenolic resins, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(novolak, trifluoromethyl substituted, reaction product with Et vinyl

ether; novel polymers and photoresist compns. comprising electroneg. groups)

IT 26838-55-1P, Poly(Pentafluorostyrene) 403814-65-3P 403814-66-4P 403814-67-5P, 4-tert-Butoxy-2,3,5,6-tetrafluorostyrene-4-Hydroxy-2,3,5,6-tetrafluorostyrene **copolymer** 403814-68-6P 403814-69-7P 403814-70-0P **403814-71-1P**, 4-Hydroxy-2,3,5,6-tetrafluorostyrene-isobornyl methacrylate **copolymer 403814-72-2P**, tert-Butylmethacrylate-4-Hydroxy-2,3,5,6-tetrafluorostyrene-pentafluorostyrene **copolymer** 403814-73-3P 403814-74-4P 403814-75-5P 403814-76-6P 403814-77-7P
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(novel polymers and photoresist compns. comprising electroneg. groups)

IT 109-92-2DP, Ethyl vinyl ether, reaction with trifluoromethyl substituted novolak 3188-13-4DP, Chloromethyl ethyl ether, reaction product with Formalin-trifluoro-m-cresol **copolymer** 24424-99-5DP, Di-tert-butyl dicarbonate, polymer with trifluoromethyl novolak 25512-65-6DP, Dihydropyran, reaction product with formalin-trifluoro-m-cresol **copolymer** 37604-40-3P 37702-76-4DP, reaction product with dihydropyronyl 37702-76-4P, Formaldehyde-trifluoro-m-cresol **copolymer** 403852-88-0DP, reaction product with di-Bu dicarbonate **403852-88-0P**, 4-Acetoxystyrene-tert-butyl **acrylate** -trifluoromethyl styrene **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(novel polymers and photoresist compns. comprising electroneg. groups)

IT 356058-56-5
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid; novel polymers and photoresist compns. comprising electroneg. groups)

IT 653-34-9 1310-58-3, Potassium hydroxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of novel polymers and photoresist compns. comprising electroneg. groups)

IT 343305-41-9P 385422-30-0P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of novel polymers and photoresist compns. comprising electroneg. groups)

L26 ANSWER 30 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:153055 CAPLUS
DOCUMENT NUMBER: 136:207687
TITLE: **Chemically amplified** positive-working photoresist composition for fabrication of semiconductor devices such as super LSI
INVENTOR(S): Takeda, Takanobu; Watanabe, Osamu; Hirahara, Kazuhiro; Maeda, Kazunori; Kusaki, Wataru; Nagura, Shigehiro
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002062652	A2	20020228	JP 2000-245617	20000814
US 2002039701	A1	20020404	US 2001-928455	20010814
US 6641975	B2	20031104		

PRIORITY APPLN. INFO.: JP 2000-245617 A 20000814

AB The title composition contains a **copolymer** as a base resin, wherein the **copolymer** is made of hydroxystyrene, tertalkyl (meth) **acrylate**, and phenoxyalkyl (meth)**acrylate**. The composition, which contain the **copolymer**, provides the **resist** of the high sensitivity and the high resolution, and the good etching **resistance**.

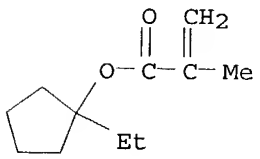
IT **401606-84-6P**, Acetoxystyrene-Phenoxyethyl methacrylate-2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**copolymer** in **chemical amplified** pos.-working photoresist composition)

RN 401606-84-6 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with ethenylphenyl acetate and 2-phenoxyethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

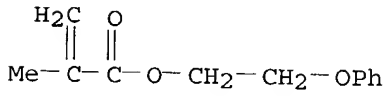
CRN 59858-52-5
CMF C10 H10 O2
CCI IDS

D1— CH═ CH_2

D1— O— Ac

CM 3

CRN 10595-06-9
CMF C12 H14 O3



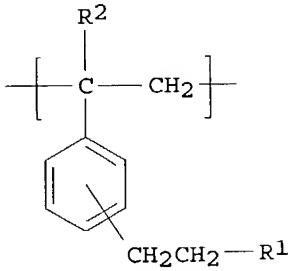
IC ICM G03F007-039
ICS C08F012-14; C08F020-12; C08F020-30; C08K005-00; C08L033-04; G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 76
ST amplified pos working photoresist compn
IT Light-sensitive materials
Positive **photoresists**
Semiconductor device fabrication
(**chemical amplified** pos.-working photoresist composition for fabrication of semiconductor devices such as super LSI)
IT **401606-84-6P**, Acetoxystyrene-Phenoxyethyl methacrylate-2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**copolymer** in **chemical amplified** pos.-working photoresist composition)

L26 ANSWER 31 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:63922 CAPLUS
DOCUMENT NUMBER: 136:126551
TITLE: Styrene polymer having acid-sensitive dissociable organic groups for radiation-sensitive **chemically amplified resist** resin composition
INVENTOR(S): Nishimura, Yukio; Wang, Yung; Kobayashi, Eiichi;

Shiotani, Takeo; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): Jsr Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002023370	A2	20020123	JP 2000-204082	20000705

PRIORITY APPLN. INFO.: JP 2000-204082 20000705
GI



I

AB The title styrene polymer has repeating unit I (R1 = C≤20 acid-sensitive dissociable group; R2 = H, methyl) and has 1,000-500,000 weight average mol. weight as styrene according to GPC. The resin provides the **resist** of the good pattern profile and the high sensitivity.

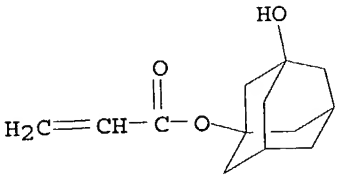
IT **391671-27-5D**, tert-Butyl 3-(vinylphenyl)propionate-1-**Acryloyloxy**-3-hydroxyadamantane-p-Acetoxystyrene **copolymer**, hydrolyzed
RL: RCT (Reactant); RACT (Reactant or reagent)
(styrene polymer having acid-sensitive dissociable organic groups for light-sensitive **resist** resin composition)

RN 391671-27-5 CAPLUS

CN Benzenepropanoic acid, ar-ethenyl-, 1,1-dimethylethyl ester, polymer with 4-ethenylphenyl acetate and 3-hydroxytricyclo[3.3.1.13,7]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

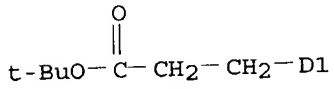
CRN 216581-76-9
CMF C13 H18 O3



CM 2

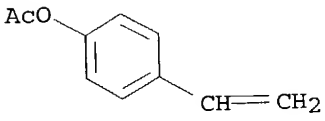
CRN 55986-15-7
CMF C15 H20 O2
CCI IDS

D1-CH=CH2



CM 3

CRN 2628-16-2
CMF C10 H10 O2



IC ICM G03F007-039
ICS C08F012-22; C08K005-00; C08L025-18; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST styrene polymer dissociable org radiation amplified **resist** resin compn
IT Light-sensitive materials
Photoresists

KOROMA EIC1700

(styrene polymer having acid-sensitive dissociable organic groups for light-sensitive **resist** resin composition)

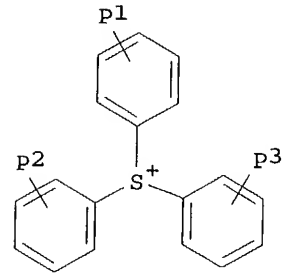
IT 110-87-2, 3,4-Dihydro-2H-pyran 1592-20-7, p-(Chloromethyl)styrene 5292-43-3, tert-Butyl bromoacetate **391671-27-5D**, tert-Butyl 3-(vinylphenyl)propionate-1-**Acryloyloxy**-3-hydroxyadamantane-p-Acetoxystyrene **copolymer**, hydrolyzed 391671-29-7D, tert-Butyl 3-(vinylphenyl)propionate-1-**Acryloyloxy**-3-hydroxyadamantane-3-(4-Vinylphenyl)propionicacid **copolymer**, hydrolyzed 391671-31-1 391671-32-2 391671-33-3 391671-36-6 391671-38-8 391671-40-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(styrene polymer having acid-sensitive dissociable organic groups for light-sensitive **resist** resin composition)

IT 55986-15-7P, tert-Butyl 3-(vinylphenyl)propionate 91142-57-3P, 3-(4-Vinylphenyl)propionic acid
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(styrene polymer having acid-sensitive dissociable organic groups for light-sensitive **resist** resin composition)

L26 ANSWER 32 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:9964 CAPLUS
DOCUMENT NUMBER: 136:77256
TITLE: **Chemical amplifying** type positive **resist** composition and sulfonium salt
INVENTOR(S): Uetani, Yasunori; Kamabuchi, Akira; Oohashi, Kenji
PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan
SOURCE: Eur. Pat. Appl., 34 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

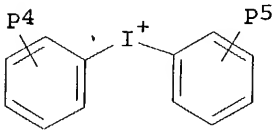
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1167349	A1	20020102	EP 2001-114724	20010621
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002116546	A2	20020419	JP 2001-184546	20010619
CN 1330289	A	20020109	CN 2001-129511	20010622
US 2002015913	A1	20020207	US 2001-886386	20010622
US 6548220	B2	20030415		

PRIORITY APPLN. INFO.: JP 2000-189120 A 20000623
OTHER SOURCE(S): MARPAT 136:77256
GI



$P6SO_3^-$

I



$P7SO_3^-$

II

AB A **chemical amplifying** type pos. **resist** composition provides a **resist** pattern having an exceedingly improved line edge roughness, and is excellent in various **resist** performances such as dry etching **resistance**, sensitivity and resolution; and comprises: (A) an acid generator containing (a) a sulfonium salt Q1Q2S+CHQ3C(:O)Q4 Q5SO3- (Q1,2 = alkyl, cycloalkyl, or Q1,2 together with a sulfur atom to which they are adjacent form an heteroalicyclic group; Q3 = H; Q4 = alkyl, cycloalkyl, or Q3,4 together with a CHC(:O) group to which they are adjacent form a 2-oxocycloalkyl group; and Q5SO3- = organosulfonate ion); and (b) at least one onium salt selected from a triphenylsulfonium salt I, and a diphenyliodonium salt II (P1-5= H, hydroxyl group, alkyl, alkoxy; and P6SO3- and P7SO3- = organosulfonate ion); and (B) a resin which has a polymerization unit having a group instable against an acid, and is alkali-insol. or -slightly soluble itself, but is converted to alkali-soluble by the action of an acid.

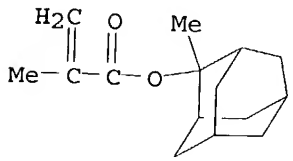
IT **341969-10-6DP**, p-Acetoxystyrene-2-methyl-2-admantylmethacrylate **copolymer**, hydrolyzed
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical amplifying** type pos. **resist** composition containing resin)

RN 341969-10-6 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

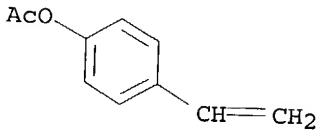
CM 1

CRN 177080-67-0
CMF C15 H22 O2



CM 2

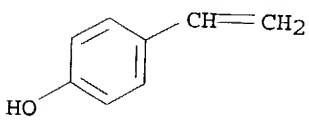
CRN 2628-16-2
CMF C10 H10 O2



IT **200808-68-0**, tert-Butyl **acrylate**-4-hydroxystyrene-styrene **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(**chemical amplifying** type pos. **resist** composition containing resin)
RN 200808-68-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

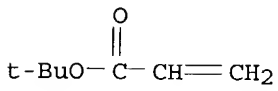
CM 1

CRN 2628-17-3
CMF C8 H8 O



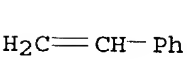
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8



IC ICM C07C381-00
ICS C07D333-46; G03F007-004; G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **chem amplifying** photoresist compn sulfonium salt
IT **Photoresists**
(**Chemical amplifying** type pos. **resist** composition and sulfonium salt for)
IT 177034-80-9 185195-30-6, Di(4-tert-butylphenyl) iodonium camphor sulfonate
RL: TEM (Technical or engineered material use); USES (Uses)
(**chemical amplifying** type pos. **resist** composition containing acid generator)
IT 24544-04-5, 2,6-Diisopropylaniline
RL: TEM (Technical or engineered material use); USES (Uses)
(**chemical amplifying** type pos. **resist** composition containing acid quencher)
IT 341969-10-6P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(**chemical amplifying** type pos. **resist** composition containing resin)
IT 258879-89-9P 299416-56-1P **341969-10-6DP**, p-Acetoxystyrene-2-methyl-2-admantylmethacrylate **copolymer**, hydrolyzed 351867-98-6P, 1-(1-Adamantyl)-1-methylethylacrylate-3-hydroxy-1-adamantylacrylate-maleic acid anhydride-2-norbornene **copolymer** 364736-22-1P, 2-Ethyl-2-adamantyl methacrylate-5-methacryloyloxy-2,6-norbornanelactone-α-methacryloyloxy-γ-butyrolactone **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical amplifying** type pos. **resist** composition containing resin)
IT **200808-68-0**, tert-Butyl **acrylate**-4-hydroxystyrene-styrene **copolymer**

RL: TEM (Technical or engineered material use); USES (Uses)
(**chemical amplifying** type pos. **resist** composition containing resin)

IT 110-01-0, Tetrahydrothiophene 2795-39-3, Potassium perfluorooctanesulfonate 2926-27-4, Potassium trifluoromethanesulfonate 5469-26-1, 1-Bromopinacolone 16836-95-6, Silver p-Toluenesulfonate 20520-61-0 29420-49-3, Potassium perfluorobutanesulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of acid generator for **chemical amplifying** type pos. **resist** composition)

IT 303177-16-4P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of acid generator for **chemical amplifying** type pos. **resist** composition)

IT 347193-29-7P 383367-32-6P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(preparation of acid generator for **chemical amplifying** type pos. **resist** composition)

IT 347193-28-6P 383367-33-7P 383367-34-8P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(sulfonium salt as acid generator for **chemical amplifying** type pos. **resist** composition)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 33 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:867995 CAPLUS
DOCUMENT NUMBER: 136:12842
TITLE: Positive **resist** composition and onium salts of saccharin derivatives
INVENTOR(S): Kodama, Kunihiko; Kanna, Shinichi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 73 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1158363	A1	20011128	EP 2001-111990	20010522
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001330947	A2	20011130	JP 2000-150217	20000522
US 2002006578	A1	20020117	US 2001-860440	20010521
US 6605409	B2	20030812		

PRIORITY APPLN. INFO.: JP 2000-150217 A 20000522
OTHER SOURCE(S): MARPAT 136:12842

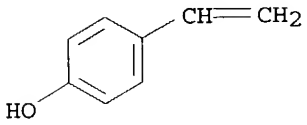
AB A pos. **resist** composition comprises: (A) a compound generating a specific sulfonimide compound: R'S(:O)(:O)NHYR'' (Y = single bond, CO, SO2; R', R'' = alkyl, aryl, aralkyl, camphor group; R' and R'' may be bonded to each other to form an alkylene, arylene, aralkylene group) by irradiation with an actinic ray or a radiation; and (B) a resin having a group, which is decomposed by the action of an acid to increase the solubility of the composition in an alkali developer. The **resist** composition has an improved resolving power and an improved process allowance such as exposure margin and the depth of focus in a lithog. technique using a light source of short wavelengths capable of super fine working and a pos. **chemical amplified resist.**

IT **159296-87-4DP**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer**, isobutyoxyether ether **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer** **200808-68-0P**, tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polymer resin for pos. **resist** composition)

RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

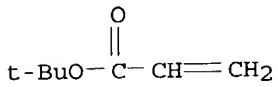
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

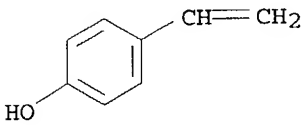
CRN 1663-39-4
CMF C7 H12 O2



RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

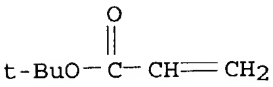
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

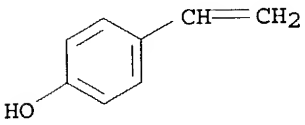
CRN 1663-39-4
CMF C7 H12 O2



RN 200808-68-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

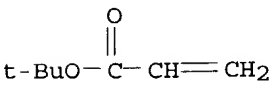
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM G03F007-004
ICS G03F007-039; C07C381-12; C07D275-06
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST photoresist sulfonimide compd onium salt saccharin deriv
IT Positive **photoresists**
(sulfonimide compd and saccharin derivs. for)
IT Surfactants
(sulfonimide compd and saccharin derivs. for pos. **resist** composition)
IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; pos. **resist** composition containing)
IT 14159-45-6 39153-56-5 66003-78-9 84563-54-2 138529-81-4 193345-23-2 197447-16-8 247589-67-9 258341-98-9 297742-41-7
RL: TEM (Technical or engineered material use); USES (Uses)
(photo-acid generator for pos. **resist** composition)
IT 60-12-8DP, Phenethanol, reaction products with poly(hydroxystyrene) and tert-Bu vinyl ether, acetate 64-17-5DP, Ethanol, reaction products with poly(hydroxystyrene) and tert-Bu vinyl ether 78-83-1DP, Isobutanol, reaction products with poly(hydroxystyrene) and tert-Bu vinyl ether 100-51-6DP, Benzyl alcohol, reaction products with poly(hydroxystyrene) and tert-Bu vinyl ether, acetate 108-24-7DP, Acetic anhydride, ester with poly(hydroxystyrene) alkoxyethyl ether derivs. 109-53-5DP, Isobutyl vinyl ether, oxyethylidene ether with Bu **acrylate**-hydroxystyrene **copolymer** 926-02-3DP, tert-Butyl vinyl ether, reaction products with poly(hydroxystyrene) and cyclohexylehtanol 4442-79-9DP, 2-Cyclohexylethanol, reaction products with poly(hydroxystyrene) and tert-Bu vinyl ether 24979-70-2DP, VP8000, substituted 1-alkoxyethyl ethers, acetate 147625-42-1P, 4-Hydroxystyrene homopolymer tert-butyl carbonate **159296-87-4DP**, tert-Butyl **acrylate** -p-hydroxystyrene **copolymer**, isobutyoxyether ether **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer 200808-68-0P**, tert-Butyl **acrylate** -p-hydroxystyrene-styrene **copolymer** 376359-28-3DP, reaction products with poly(hydroxystyrene) and tert-Bu vinyl ether, acetate 376359-32-9DP, 4-tert-Butylstyrene-4-hydroxystyrene **copolymer**, reaction products with cyclohexylethanol and tert-Bu vinyl ether
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(polymer resin for pos. **resist** composition)

IT 153698-63-6
RL: TEM (Technical or engineered material use); USES (Uses)
(pos. **resist** composition containing)
IT 376357-65-2P 376357-70-9P 376357-77-6P 376357-83-4P 376357-88-9P
376357-89-0P 376357-95-8P 376358-03-1P 376358-13-3P 376358-18-8P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(pos. **resist** composition containing saccharin derivs. as photo-acid generator)
IT 376358-25-7 376358-32-6 376358-38-2 376358-44-0 376358-50-8
376358-58-6 376358-65-5 376358-72-4 376358-78-0
RL: TEM (Technical or engineered material use); USES (Uses)
(pos. **resist** composition containing saccharin derivs. as photo-acid generator)
IT 81-07-2, Saccharin 2217-79-0, Diphenyliodonium iodide 3744-08-9, Triphenylsulfonium iodide 3744-09-0 111329-06-7 203927-87-1
365971-60-4 376357-62-9 376357-74-3 376357-81-2 376357-86-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of saccharin derivs. for pos. **resist** composition)
IT 137462-24-9, Megafac F176 216679-67-3, Megafac R08
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; pos. **resist** composition containing)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 34 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:817219 CAPLUS
DOCUMENT NUMBER: 135:350570
TITLE: **Chemically amplified** positive **resist** compositions with improved resolution, pattern profile and focal latitude for deep UV lithography
INVENTOR(S): Ohsawa, Youichi; Watanabe, Jun; Takeda, Takanobu; Seki, Akihiro
PATENT ASSIGNEE(S): Shin-Etsu Chemical Co., Ltd., Japan
SOURCE: U.S. Pat. Appl. Publ., 33 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001038971	A1	20011108	US 2001-799052	20010306
US 6682869	B2	20040127		
JP 2001324813	A2	20011122	JP 2001-57719	20010302

PRIORITY APPLN. INFO.: JP 2000-61350 A 20000307
AB A **chemical amplified**, pos. **resist** composition is provided comprising (A) a photoacid generator and (B) a resin which changes its solubility in an alkali developer under the action of acid and has substituents of the formula: Ph-(CH2)nOCH(CH2CH3)- (n = 0,1). The composition

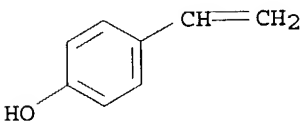
has many advantages including improved focal latitude, improved resolution, minimized line width variation or shape degradation even on long-term PED, minimized defect left after coating, development and stripping, and improved pattern profile after development and is suited for microfabrication by any lithog., especially deep UV lithog.

IT **159296-87-4D**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer**, 1-benzyloxypropyl derivs. **200808-68-0D**, tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer**, 1-benzyloxypropyl derivs. **326925-68-2**, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer** **326925-68-2D**, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**, 1-benzyloxypropyl derivs. **362478-99-7D**, 1,4-Butanediol divinyl ether-p-hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**, 1-benzyloxypropyl derivs.
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)

RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

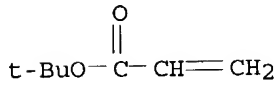
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

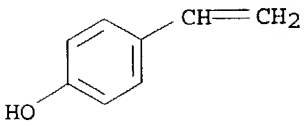
CRN 1663-39-4
CMF C7 H12 O2



RN 200808-68-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

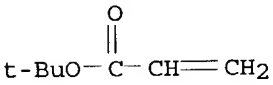
CM 1

CRN 2628-17-3
CMF C8 H8 O



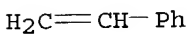
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

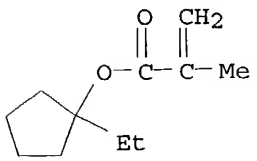
CRN 100-42-5
CMF C8 H8



RN 326925-68-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

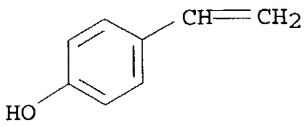
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

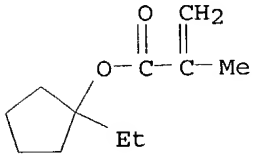
CRN 2628-17-3
CMF C8 H8 O



RN 326925-68-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

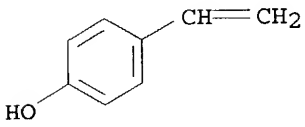
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

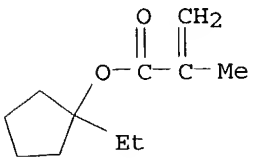
CRN 2628-17-3
CMF C8 H8 O



RN 362478-99-7 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 1,4-bis(ethenyloxy)butane and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1
CMF C11 H18 O2

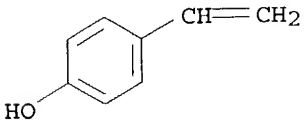


CM 2

CRN 3891-33-6
CMF C8 H14 O2

CM 3

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03F007-004
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **chem amplified** pos photoresist compn UV lithog; **resist chem amplified** pos compn UV photolithog
IT Photolithography
Positive **photoresists**
(UV; **chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)
IT 24979-70-2DP, Poly(p-hydroxystyrene), 1-benzyloxypropyl, 1-phenethyloxypropyl, 1-ethoxyethyl and tert-butoxycarbonyl derivs.
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(**chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)
IT **159296-87-4D**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer**, 1-benzyloxypropyl derivs. **200808-68-0D**,

tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer**
, 1-benzyloxypropyl derivs. **326925-68-2**, p-Hydroxystyrene-1-
ethylcyclopentyl methacrylate **copolymer 326925-68-2D**,
p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**,
1-benzyloxypropyl derivs. **362478-99-7D**, 1,4-Butanediol divinyl
ether-p-hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**
, 1-benzyloxypropyl derivs. 362479-00-3D, 1,4-Butane diol divinyl
ether-p-hydroxystyrene **copolymer**, 1-phenethyloxypropyl derivs.
369385-37-5D, p-Hydroxystyrene-1,2-Bis(vinyloxy)propane **copolymer**
, 1-benzyloxypropyl and 1-ethoxypropyl derivs.
RL: PEP (Physical, engineering or chemical process); TEM (Technical or
engineered material use); PROC (Process); USES (Uses)
(**chemical amplified** pos. **resist** compns. with
improved resolution, pattern profile and focal latitude for deep UV
lithog.)

IT 15895-87-1P, Benzyl propenyl ether
RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**
; **PREP (Preparation)**; RACT (Reactant or reagent)
(in preparation of base resin for **chemical amplified** pos.
resist compns.)

IT 100-51-6, Benzyl alcohol, reactions 106-95-6, Allyl bromide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of base resin for **chemical amplified** pos.
resist compns.)

IT 14593-43-2P, Allyl benzyl ether
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP**
(Preparation); RACT (Reactant or reagent)
(in preparation of base resin for **chemical amplified** pos.
resist compns.)

IT 13891-29-7, Triphenylsulfonium p-toluenesulfonate 39153-56-5,
Bis(2,4-dimethylphenylsulfonyl)diazomethane 83697-56-7 138529-81-4,
Bis(cyclohexylsulfonyl)diazomethane 138529-84-7, Bis(tert-
butylsulfonyl)diazomethane 258872-08-1, Tris(4-butoxyphenyl)sulfonium
nonafluorobutane-sulfonate 326925-52-4 369385-38-6 369385-39-7
RL: PEP (Physical, engineering or chemical process); TEM (Technical or
engineered material use); PROC (Process); USES (Uses)
(photoacid generator; **chemical amplified** pos.
resist compns. with improved resolution, pattern profile and focal
latitude for deep UV lithog.)

IT 369385-35-3DP, p-tert-Butoxystyrene-p-(chloromethyl)styrene
copolymer, hydrolyzed, 1-benzyloxypropyl and tert-butoxycarbonyl
derivs.
RL: PEP (Physical, engineering or chemical process); **SPN (Synthetic**
preparation); TEM (Technical or engineered material use); **PREP**
(Preparation); PROC (Process); USES (Uses)
(tri-, nona-branched; **chemical amplified** pos.
resist compns. with improved resolution, pattern profile and focal
latitude for deep UV lithog.)

L26 ANSWER 35 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:781404 CAPLUS
DOCUMENT NUMBER: 135:336907

TITLE: **Chemically amplified** positive **resist** compositions with improved resolution, pattern profile and focal latitude for deep UV lithography

INVENTOR(S): Ohsawa, Youichi; Watanabe, Jun; Takeda, Takanobu; Seki, Akihiro

PATENT ASSIGNEE(S): Japan

SOURCE: U.S. Pat. Appl. Publ., 34 pp.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001033994	A1	20011025	US 2001-799009	20010306
JP 2001324812	A2	20011122	JP 2001-57716	20010302

PRIORITY APPLN. INFO.: JP 2000-61357 A 20000307

AB A **chemical amplified**, pos. **resist** composition is provided comprising (A) a photoacid generator and (B) a resin which changes its solubility in an alkali developer under the action of acid and has substituents of the formula: C6H11 -(CH2)nOCH(CH2CH3)- wherein C6H11 is cyclohexyl and n = 0,1. The composition has many advantages including improved focal latitude, improved resolution, minimized line width variation or shape degradation even on long-term PED, minimized defect left after coating, development and stripping, and improved pattern profile after development and is suited for microfabrication by any lithog., especially deep UV lithog.

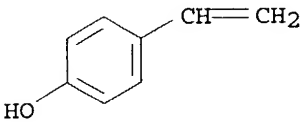
IT **159296-87-4D**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer**, cyclohexyloxypropyl ethers **200808-68-0D**, tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer**, cyclohexyloxypropyl ethers **326925-68-2**, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer 326925-68-2D**, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**, cyclohexyloxypropyl ethers **362478-99-7D**, 1,4-Butanediol divinyl ether-p-hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**, cyclohexyloxypropyl ethers
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)

RN 159296-87-4 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

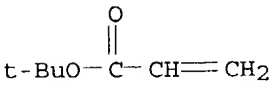
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

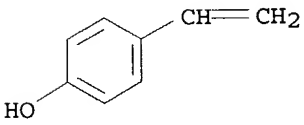
CRN 1663-39-4
CMF C7 H12 O2



RN 200808-68-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

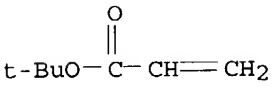
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

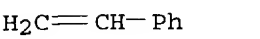
CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8

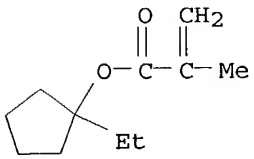
KOROMA EIC1700



RN 326925-68-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

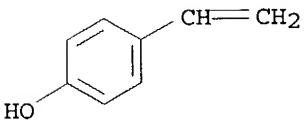
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

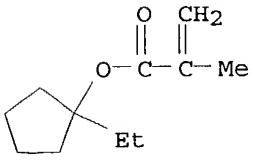
CRN 2628-17-3
CMF C8 H8 O



RN 326925-68-2 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

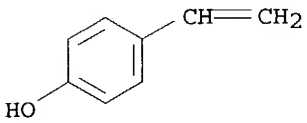
CM 1

CRN 266308-58-1
CMF C11 H18 O2



CM 2

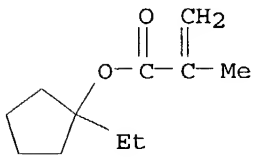
CRN 2628-17-3
CMF C8 H8 O



RN 362478-99-7 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 1,4-bis(ethenyloxy)butane and 4-ethenylphenol (9CI) (CA INDEX NAME)

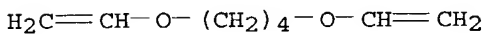
CM 1

CRN 266308-58-1
CMF C11 H18 O2



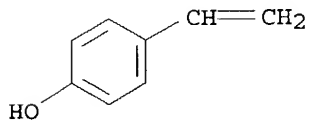
CM 2

CRN 3891-33-6
CMF C8 H14 O2



CM 3

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03F007-039
NCL 430287100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **chem amplified** pos photoresist compn UV lithog; **resist chem amplified** pos compn UV photolithog
IT Photolithography
Positive **photoresists**
(UV; **chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)
IT 24979-70-2DP, Poly(p-hydroxystyrene), cyclohexyloxypropyl, cyclohexylmethyloxypropyl, 1-ethoxyethyl and tert-butoxycarbonyl derivs.
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(**chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)
IT **159296-87-4D**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer**, cyclohexyloxypropyl ethers **200808-68-0D**, tert-Butyl **acrylate**-p-hydroxystyrene-styrene **copolymer**, cyclohexyloxypropyl ethers **326925-68-2**, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer 326925-68-2D**, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**, cyclohexyloxypropyl ethers **362478-99-7D**, 1,4-Butanediol divinyl ether-p-hydroxystyrene-1-ethylcyclopentyl methacrylate **copolymer**, cyclohexyloxypropyl ethers 362479-00-3D, 1,4-Butane diol divinyl ether-p-hydroxystyrene **copolymer**, cyclohexylmethyloxypropyl derivs. 369385-37-5D, p-Hydroxystyrene-1,2-Bis(vinyloxy)propane **copolymer**, cyclohexyloxypropyl and 1-ethoxypropyl derivs.
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)
IT 165180-83-6P, Cyclohexyl 1-propenyl ether
RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(in preparation of base resin for **chemical amplified** pos. **resist** compns.)
IT 106-95-6, Allyl bromide, reactions 108-93-0, Cyclohexanol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of base resin for **chemical amplified** pos. **resist** compns.)
IT 14289-64-6P, Allyl cyclohexyl ether
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(in preparation of base resin for **chemical amplified** pos. **resist** compns.)
IT 13891-29-7, Triphenylsulfonium p-toluenesulfonate 39153-56-5, Bis(2,4-dimethylphenylsulfonyl)diazomethane 83697-56-7 138529-81-4,

Bis(cyclohexylsulfonyl)diazomethane 138529-84-7, Bis(tert-butylsulfonyl)diazomethane 258872-08-1, Tris(4-butoxyphenyl)sulfonium nonafluorobutane-sulfonate 326925-52-4 369385-38-6 369385-39-7
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(photoacid generator; **chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)

IT 369385-35-3DP, p-tert-Butoxystyrene-p-(chloromethyl)styrene **copolymer**, cyclohexyloxypropyl and tert-butoxycarbonyl derivs.
RL: PEP (Physical, engineering or chemical process); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(tri-, nona-branched; **chemical amplified** pos. **resist** compns. with improved resolution, pattern profile and focal latitude for deep UV lithog.)

L26 ANSWER 36 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:581559 CAPLUS
DOCUMENT NUMBER: 135:160153
TITLE: Radiation-sensitive resin composition
INVENTOR(S): Numata, Jun; Suzuki, Aki; Hara, Hiromichi; Natsume, Norihiro; Murata, Kiyoshi; Yamamoto, Masafumi; Soyano, Akimasa; Kajita, Toru; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): JSR Corp., Japan
SOURCE: Eur. Pat. Appl., 77 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1122605	A2	20010808	EP 2001-102326	20010201
EP 1122605	A3	20010919		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001215689	A2	20010810	JP 2000-28456	20000204
JP 2002082438	A2	20020322	JP 2000-273962	20000908
US 2001023050	A1	20010920	US 2001-774714	20010201
US 6623907	B2	20030923		
SG 90230	A1	20020723	SG 2001-565	20010205

PRIORITY APPLN. INFO.: JP 2000-28456 A 20000204
JP 2000-273962 A 20000908

AB The invention relates to a pos.- or neg.-tone radiation sensitive resin composition suitable as a **resist** for ultra-microprocessing using UV, deep-UV, x-ray radiation and charged particle rays. A pos. tone radiation-sensitive resin composition containing (a) a low mol. weight compound having at least one amino group in which the nitrogen atom has at least one hydrogen atom bonded thereto and at least one of the hydrogen atoms is

replaced by a tert-butoxycarbonyl group, (b) a photoacid generator and (c) a resin insol. or scarcely soluble in alkali which is protected by an acid-soluble group and becomes soluble in alkali when the acid-dissociating group dissocs. or an alkali-soluble resin and an alkali solubility control agent, is disclosed. Also disclosed is a neg.-tone radiation sensitive resin composition comprising a low mol. weight compound, a photoacid generator, and an alkali-soluble resin, and a compound capable of crosslinking with alkali-soluble resin in the presence of an acid. The composition is useful as a **chem . amplified resist** which effectively responds to various radiations, exhibits superior sensitivity and resolution, forms fine patterns at a high precision and in a stable manner even if the patterns are isolated line patterns.

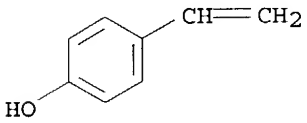
IT **200808-68-0**, Styrene-p-hydroxystyrene-tert-butyl **acrylate copolymer**
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(pos.-tone radiation-sensitive composition containing acid-dissociating group resin)

RN 200808-68-0 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

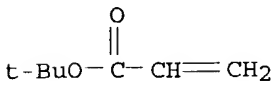
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5

CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM G03F007-004
ICS G03F007-038; G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST radiation resin neg pos tone **resist**
IT **Resists**
(chemical amplified; pos.-tone radiation-sensitive resin composition containing alkali-soluble acid-dissociating group containing polymer)
IT Aminoplasts
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(pos.-tone radiation-sensitive composition containing crosslinking agent)
IT **Photoresists**
(pos.-tone radiation-sensitive resin composition containing alkali-soluble acid-dissociating group containing polymer)
IT Polymers, uses
RL: NUU (Other use, unclassified); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pos.-tone radiation-sensitive resin composition containing alkali-soluble acid-dissociating group containing polymer)
IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate 133710-62-0 138529-81-4 185195-30-6 194999-85-4 205514-94-9 353275-43-1
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(acid generator; pos.-tone radiation-sensitive resin composition containing acid generator agent of)
IT 59255-81-1 151476-40-3 193810-83-2 330576-56-2 353275-42-0
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(acid-diffusion control agent; pos.-tone radiation-sensitive resin composition containing acid-diffusion control agent of)
IT 97-64-3, Ethyl lactate 110-43-0, 2_Heptanone 763-69-9, Ethyl 3-ethoxypropionate 84540-57-8, Propylene glycol monomethyl ether acetate
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(pos.-tone radiation-sensitive composition containing)
IT 59269-51-1D, Polyhydroxystyrene, tert-Bu and tert-butoxycarbonyl and ethoxyethyl and cyclohexyloxyethyl group modified **200808-68-0**, Styrene-p-hydroxystyrene-tert-butyl **acrylate copolymer**
353275-44-2 353275-46-4 353275-47-5
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(pos.-tone radiation-sensitive composition containing acid-dissociating group resin)

KOROMA EIC1700

IT 24979-70-2, Poly(4-hydroxystyrene) 24979-74-6, 4-Hydroxystyrene-styrene **copolymer**
RL: NUU (Other use, unclassified); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(pos.-tone radiation-sensitive composition containing alkali-soluble resin of)
IT 9011-05-6 17464-88-9, CYMEL 1174
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(pos.-tone radiation-sensitive composition containing crosslinking agent)
IT 305379-12-8P 330576-44-8P 353275-41-9P 353276-47-8P
RL: NUU (Other use, unclassified); POF (Polymer in formulation); SPN **(Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(pos.-tone radiation-sensitive resin composition containing alkali-soluble acid-dissociating group)

L26 ANSWER 37 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:524739 CAPLUS
DOCUMENT NUMBER: 135:114444
TITLE: Electron beam or x-ray negative-working **resist** composition
INVENTOR(S): Aoai, Toshiaki; Adegawa, Yutaka; Yagihara, Morio
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 85 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1117004	A2	20010718	EP 2001-100113	20010112
EP 1117004	A3	20030813		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001337452	A2	20011207	JP 2001-5374	20010112

PRIORITY APPLN. INFO.: JP 2000-4766 A 20000113
JP 2000-84469 A 20000324

AB The invention relates to a neg.-working **resist** composition useful for super microlithog. such as VLSI and high-capacity microchips and to a composition capable of forming microfine patterns using X-rays and an electron beam, and to a composition suitable for working of semiconductor devices using an electron beam. A neg.-working **resist** composition for electron beams or x-rays comprises (a) a compound generating an acid and/or radical species by the irradiation of electron beams or x-rays, (b) a resin which is insol. in H2O and soluble in an alkali aqueous solution, (c) a crosslinking agent causing crosslinking with the resin of component (b) by the action of an acid, and (d) a compound having ≥1 unsatd. bond capable of being polymerized by an acid and/or a radical, and a neg.-working **resist**

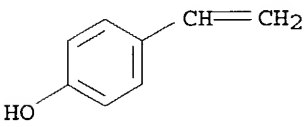
composition for electron beams or x-rays comprising (a) a compound generating an acid and/or radical species by the irradiation of electron beams or x-rays, (b') a resin having ≥1 unsatd. bond polymerizable by an acid and/or an alkali, which is insol. in H2O but soluble in an alkali aqueous solution, and (c) a crosslinking agent causing crosslinking with the resin (b') by the action of an acid are disclosed.

IT **110123-10-9P**, 4-Hydroxystyrene-2-hydroxyethyl **acrylate copolymer**
RL: DEV (Device component use); **IMF (Industrial manufacture)**; POF (Polymer in formulation); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(synthesis of alkali-soluble resin for neg.-working photoresist composition for X-ray or electron beam lithog.)

RN 110123-10-9 CAPLUS
CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

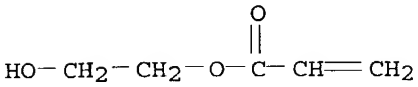
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

CRN 818-61-1
CMF C5 H8 O3



IC ICM G03F007-038
ICS G03F007-004; G03F007-028

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 36, 76

ST electron beam x ray neg photoresist crosslinking hydroxystyrene polymer

IT **Photoresists**

(**chemical-amplified**; neg.-working photoresist composition for X-ray or electron beam lithog. containing alkali-soluble resin and acidic crosslinking agent)

IT Crosslinking agents
Electron beam lithography
X-ray lithography
(neg.-working photoresist composition for X-ray or electron beam lithog. containing alkali-soluble resin and acidic crosslinking agent)

IT 3089-11-0P 32449-09-5P
RL: DEV (Device component use); **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)
(crosslinking agent; crosslinking agent for neg.-working photoresist composition for X-ray or electron beam lithog.)

IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate 168634-95-5P 258341-98-9P 270563-93-4P 270563-96-7P 279244-43-8P 349619-92-7P 349647-26-3P
RL: DEV (Device component use); **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)
(photoacid generator; acid-generating agent in neg.-working photoresist composition for X-ray or electron beam lithog.)

IT 15625-89-5, Trimethylolpropane triacrylate 17831-71-9, Tetraethyleneglycol diacrylate 29570-58-9, Dipentaerythritol hexaacrylate
RL: DEV (Device component use); NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(polymerizable monomer in neg.-working photoresist composition for X-ray or electron beam lithog.)

IT 161679-94-3P 161679-95-4P 161679-98-7P 162846-57-3P 185502-11-8P 185502-14-1P 185502-15-2P 197087-73-3P 197087-74-4P
RL: DEV (Device component use); **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **SPN (Synthetic preparation)**; **PREP (Preparation)**; USES (Uses)
(synthesis of acid crosslinking agent for neg.-working photoresist composition for X-ray or electron beam lithog.)

IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
RL: DEV (Device component use); **IMF (Industrial manufacture)**; **SPN (Synthetic preparation)**; **PREP (Preparation)**; USES (Uses)
(synthesis of acid-generating agent for neg.-working photoresist composition for X-ray or electron beam lithog.)

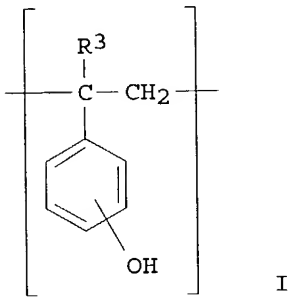
IT 24979-73-5P, 3-Hydroxystyrene-styrene **copolymer** 24979-74-6P, 4-Hydroxystyrene-styrene **copolymer 110123-10-9P**, 4-Hydroxystyrene-2-hydroxyethyl **acrylate copolymer** 171429-59-7P, 4-Hydroxystyrene-4-acetoxystyrene **copolymer** 185405-14-5P 349647-01-4P 349647-02-5P 349647-03-6P 349647-04-7P 349647-05-8P 349647-06-9P 349647-07-0P 349647-08-1P 349647-10-5P 349647-12-7P 349647-14-9P 349647-16-1P 349647-18-3P 349647-19-4P 349647-21-8P 349647-23-0P 349652-45-5P 349652-47-7P 349652-48-8P
RL: DEV (Device component use); **IMF (Industrial manufacture)**; POF (Polymer in formulation); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES

(Uses)
(synthesis of alkali-soluble resin for neg.-working photoresist composition for
X-ray or electron beam lithog.)

L26 ANSWER 38 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:451200 CAPLUS
DOCUMENT NUMBER: 135:68550
TITLE: Radiation-sensitive **chemically amplified resist** composition containing **copolymer** of **acrylic** monomer and styrene derivative monomer
INVENTOR(S): Nishimura, Yukio; Kobayashi, Eiichi; Shiotani, Takeo; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): JSR Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001166478	A2	20010622	JP 1999-344910	19991203

PRIORITY APPLN. INFO.: JP 1999-344910 19991203
GI



I

AB The composition contains a **copolymer** and a radiation sensitive acid-generator, wherein the **copolymer** has [-C(R1)(COOR2)-CH2-] (R1 = H, methyl; R2 = acid-sensitive C≥11 alicyclic leaving group) and I (R3 = H, methyl). The composition, which contains the **copolymer** of **acrylic** and styrene derivative monomers, provides the **resist** of the decreased post exposure delay on the pattern linewidth nor pattern profiles.

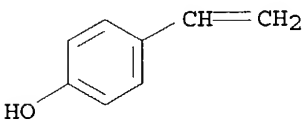
IT **200808-68-0P**, 4-Hydroxystyrene-styrene-tert-butyl **acrylate**

copolymer 345349-50-0P 345349-55-5P
345349-63-5P 345349-68-0P 345349-73-7P
345349-78-2P 345349-86-2P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive **chemical amplified resist** composition containing **copolymer** of **acrylic** monomer and styrene derivative monomer)

RN 200808-68-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

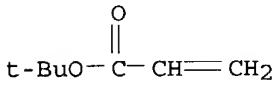
CM 1

CRN 2628-17-3
CMF C8 H8 O



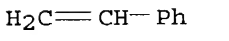
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

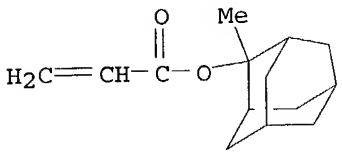
CRN 100-42-5
CMF C8 H8



RN 345349-50-0 CAPLUS
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

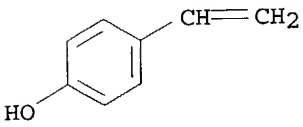
CM 1

CRN 249562-06-9
CMF C14 H20 O2



CM 2

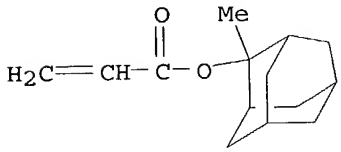
CRN 2628-17-3
CMF C8 H8 O



RN 345349-55-5 CAPLUS
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

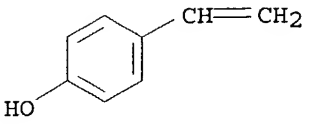
CM 1

CRN 249562-06-9
CMF C14 H20 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

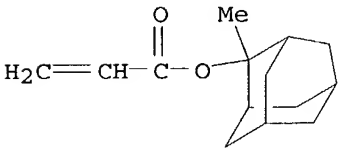
CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

RN 345349-63-5 CAPLUS
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

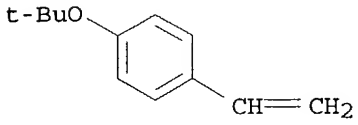
CM 1

CRN 249562-06-9
CMF C14 H20 O2



CM 2

CRN 95418-58-9
CMF C12 H16 O

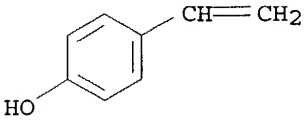


CM 3

CRN 2628-17-3

KOROMA EIC1700

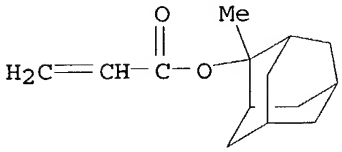
CMF C8 H8 O



RN 345349-68-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

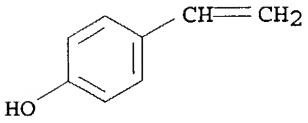
CM 1

CRN 249562-06-9
CMF C14 H20 O2



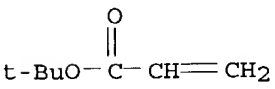
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

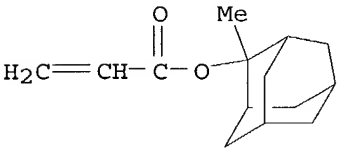
CRN 1663-39-4
CMF C7 H12 O2



RN 345349-73-7 CAPLUS
CN 2-Propenoic acid, 1,1,4,4-tetramethyl-1,4-butanediyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenylphenol and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

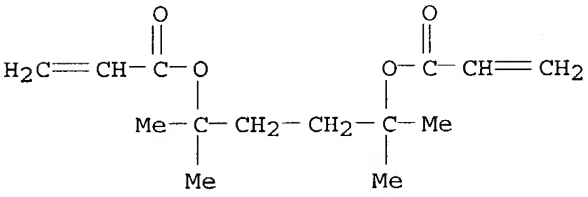
CM 1

CRN 249562-06-9
CMF C14 H20 O2



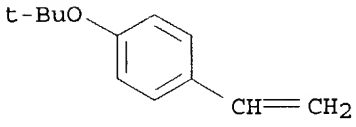
CM 2

CRN 188837-15-2
CMF C14 H22 O4



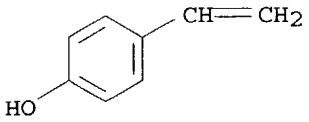
CM 3

CRN 95418-58-9
CMF C12 H16 O



CM 4

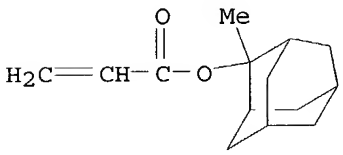
CRN 2628-17-3
CMF C8 H8 O



RN 345349-78-2 CAPLUS
CN 2-Propenoic acid, 1,1,4,4-tetramethyl-1,4-butanediyl ester, polymer with 1,1-dimethylethyl 2-propenoate, 4-ethenylphenol and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

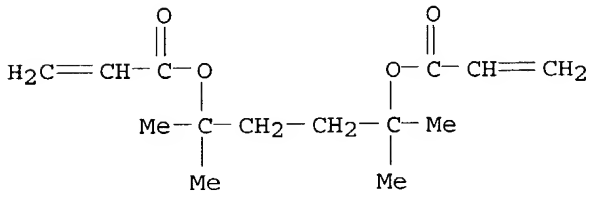
CM 1

CRN 249562-06-9
CMF C14 H20 O2



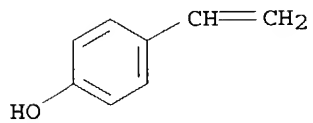
CM 2

CRN 188837-15-2
CMF C14 H22 O4



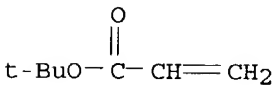
CM 3

CRN 2628-17-3
CMF C8 H8 O



CM 4

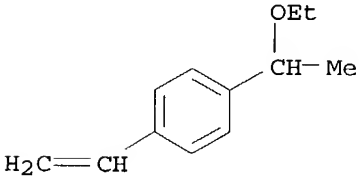
CRN 1663-39-4
CMF C7 H12 O2



RN 345349-86-2 CAPLUS
CN 2-Propenoic acid, 2-methyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 1-ethenyl-4-(1-ethoxyethyl)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

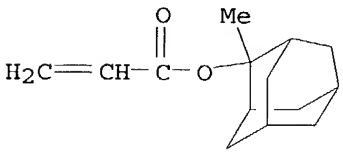
CM 1

CRN 345349-85-1
CMF C12 H16 O



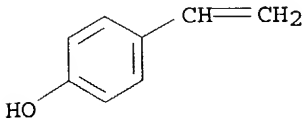
CM 2

CRN 249562-06-9
CMF C14 H20 O2



CM 3

CRN 2628-17-3
CMF C8 H8 O

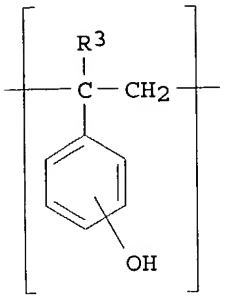


IC ICM G03F007-039
ICS C08L025-18; C08L033-06; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST radiation sensitive amplified **resist** compn **copolymer** **acrylic** monomer styrene
IT **Photoresists**
(radiation-sensitive **chemical amplified resist** composition containing **copolymer** of **acrylic** monomer and styrene derivative monomer)
IT **200808-68-0P**, 4-Hydroxystyrene-styrene-tert-butyl **acrylate** **copolymer 345349-50-0P 345349-55-5P** **345349-63-5P 345349-68-0P 345349-73-7P** **345349-78-2P 345349-86-2P**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive **chemical amplified resist** composition containing **copolymer** of **acrylic** monomer and styrene derivative monomer)

L26 ANSWER 39 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:451196 CAPLUS
DOCUMENT NUMBER: 135:68548
TITLE: Radiation-sensitive **chemically** **amplified resist** composition containing specific **copolymer**
INVENTOR(S): Nishimura, Yukio; Kobayashi, Eiichi; Shiotani, Takeo; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): JSR Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001166474	A2	20010622	JP 1999-344911	19991203

PRIORITY APPLN. INFO.: JP 1999-344911 19991203
GI



I

AB The title composition contains a radiation-sensitive acid generator and a **copolymer** having repeating unit [-C(R1)(COOR2)-CH2-] (R1 = H, methyl; R2 = C>10 alicyclic) and of repeating unit I (R3 = H, methyl) with ≤50 % content. The composition, which contains the **copolymer** having the aforementioned repeating units, shows the decreased effect of the post exposure delay(PED) on the pattern profiles.

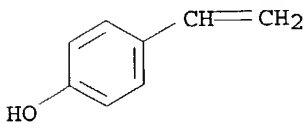
IT **200808-68-0P**, 4-Hydroxystyrene-styrene-tert-butyl **acrylate copolymer** **345348-83-6P** **345348-84-7P** **345348-85-8P** **345631-88-1P** **345631-89-2P** **345631-90-5P** **345631-91-6P**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation active **chemical amplified resist** composition containing specific **copolymer**)

RN 200808-68-0 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

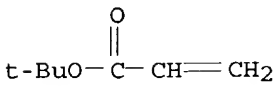
CM 1

CRN 2628-17-3
CMF C8 H8 O



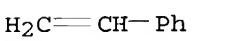
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

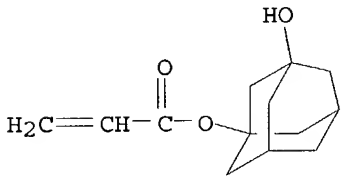
CRN 100-42-5
CMF C8 H8



RN 345348-83-6 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol and 3-hydroxytricyclo[3.3.1.13,7]dec-1-yl 2-propenoate (9CI) (CA INDEX NAME)

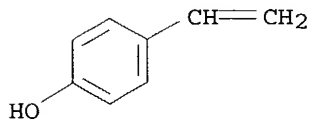
CM 1

CRN 216581-76-9
CMF C13 H18 O3



CM 2

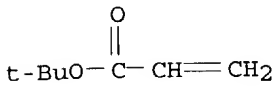
CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4

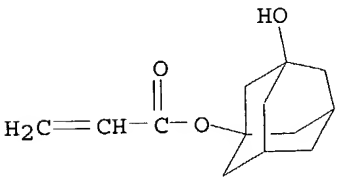
CMF C7 H12 O2



RN 345348-84-7 CAPLUS
CN 2-Propenoic acid, 3-hydroxytricyclo[3.3.1.13,7]dec-1-yl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

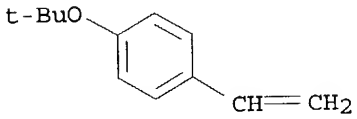
CM 1

CRN 216581-76-9
CMF C13 H18 O3



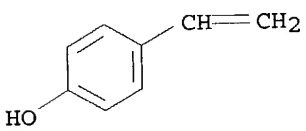
CM 2

CRN 95418-58-9
CMF C12 H16 O



CM 3

CRN 2628-17-3
CMF C8 H8 O

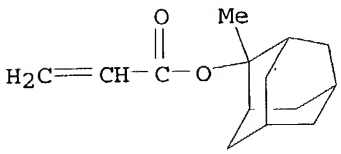


KOROMA EIC1700

RN 345348-85-8 CAPLUS
CN 2-Propenoic acid, 3-hydroxytricyclo[3.3.1.13,7]dec-1-yl ester, polymer with 4-ethenylphenol and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

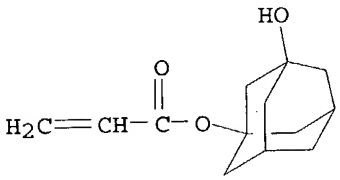
CM 1

CRN 249562-06-9
CMF C14 H20 O2



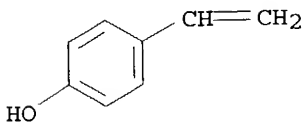
CM 2

CRN 216581-76-9
CMF C13 H18 O3



CM 3

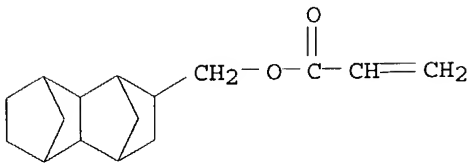
CRN 2628-17-3
CMF C8 H8 O



RN 345631-88-1 CAPLUS
CN 2-Propenoic acid, [decahydro-6(or 7)-hydroxy-1,4:5,8-dimethanonaphthalen-2-yl]methyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

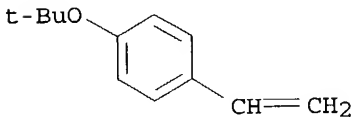
CRN 345631-87-0
CMF C16 H22 O3
CCI IDS



D1— OH

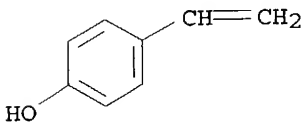
CM 2

CRN 95418-58-9
CMF C12 H16 O



CM 3

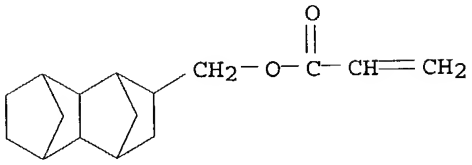
CRN 2628-17-3
CMF C8 H8 O



RN 345631-89-2 CAPLUS
CN 2-Propenoic acid, 1,1,4,4-tetramethyl-1,4-butanediyl ester, polymer with [decahydro-6(or 7)-hydroxy-1,4:5,8-dimethanonaphthalen-2-yl]methyl 2-propenoate, 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

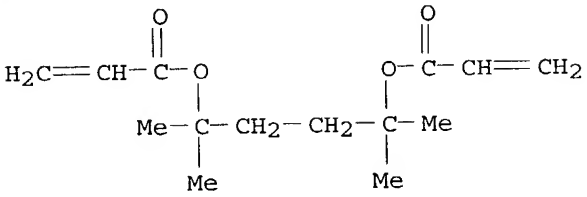
CRN 345631-87-0
CMF C16 H22 O3
CCI IDS



D1—OH

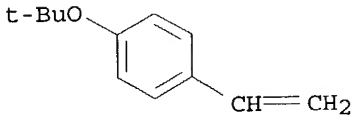
CM 2

CRN 188837-15-2
CMF C14 H22 O4



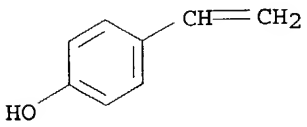
CM 3

CRN 95418-58-9
CMF C12 H16 O



CM 4

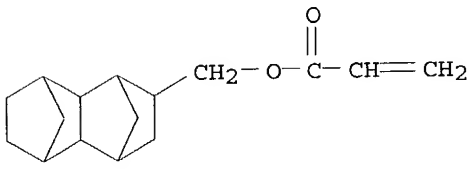
CRN 2628-17-3
CMF C8 H8 O



RN 345631-90-5 CAPLUS
CN 2-Propenoic acid, [decahydro-6(or 7)-hydroxy-1,4:5,8-dimethanonaphthalen-2-yl]methyl ester, polymer with 4-ethenylphenol and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

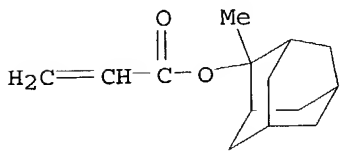
CRN 345631-87-0
CMF C16 H22 O3
CCI IDS



D1—OH

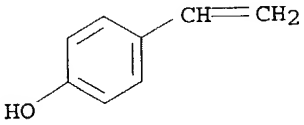
CM 2

CRN 249562-06-9
CMF C14 H20 O2



CM 3

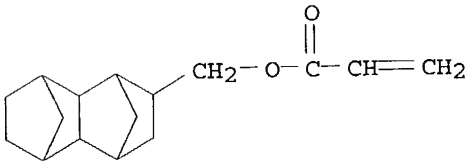
CRN 2628-17-3
CMF C8 H8 O



RN 345631-91-6 CAPLUS
CN 2-Propenoic acid, [decahydro-6(or 7)-hydroxy-1,4:5,8-dimethanonaphthalen-2-yl]methyl ester, polymer with 1,1-dimethylethyl 2-propenoate, 1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

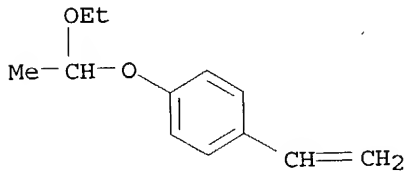
CRN 345631-87-0
CMF C16 H22 O3
CCI IDS



D1—OH

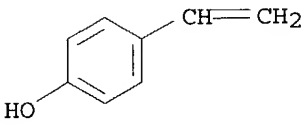
CM 2

CRN 157057-20-0
CMF C12 H16 O2



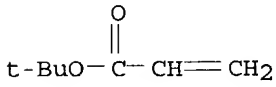
CM 3

CRN 2628-17-3
CMF C8 H8 O



CM 4

CRN 1663-39-4
CMF C7 H12 O2



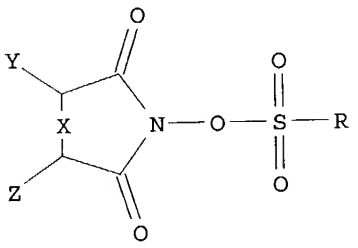
IC ICM G03F007-038
ICS C08L033-06; G03F007-004; H01L021-027; C08L025-18
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST radiation active amplified **resist** compn **copolymer**
IT Light-sensitive materials
Photoresists
(radiation active **chemical amplified resist** composition containing specific **copolymer**)
IT **200808-68-0P**, 4-Hydroxystyrene-styrene-tert-butyl **acrylate copolymer 345348-83-6P 345348-84-7P 345348-85-8P 345631-88-1P 345631-89-2P 345631-90-5P 345631-91-6P**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation active **chemical amplified resist** composition containing specific **copolymer**)

L26 ANSWER 40 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:356249 CAPLUS
DOCUMENT NUMBER: 134:374039
TITLE: Radiation-sensitive resin composition comprising N-sulfonyloxyimide compound as an acid-generating agent for **chemically amplified resists**
INVENTOR(S): Wang, Yong; Kobayashi, Eiichi; Miyaji, Masaaki; Numata, Jun; Shimokawa, Tsutomu
PATENT ASSIGNEE(S): Jsr Corp., Japan
SOURCE: Eur. Pat. Appl., 53 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

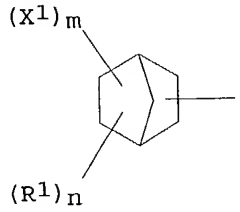
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1099691	A1	20010516	EP 2000-124457	20001108
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001199955	A2	20010724	JP 2000-336666	20001102
SG 92753	A1	20021119	SG 2000-6373	20001107
TW 513408	B	20021211	TW 2000-89123601	20001108
US 6517992	B1	20030211	US 2000-707939	20001108

PRIORITY APPLN. INFO.: JP 1999-317652 A 19991109
OTHER SOURCE(S): MARPAT 134:374039
GI



I



II

AB Disclosed are a N-sulfonyloxyimide compound having the formula I [X = single, double bond; Y, Z = H, C1-10-alkyl, and may combine to form alicyclic, heterocyclic structure; R = group of the formula II (X1 = organic group having an ester linkage, R1 = C1-10-alkyl, alkoxyl; m = 1-11, n = 0-10, m + n ≤ 11)]; and **chemical amplified** pos. and neg. radiation-sensitive resin compns. using the compound The N-sulfonyloxyimide compound is a good radiation-sensitive acid-generating agent, has no problem of volatilization or side reaction, can keep dark reaction from taking place during the storage. The compound is useful as a component of radiation-sensitive **chemical amplified resists.**

IT **200808-68-0P**, tert-Butyl **acrylate**-p-Hydroxystyrene-styrene **copolymer 220767-18-0P**, tert-Butyl **acrylate**-2,5-dimethylhexane-2,5-diacrylate-p-hydroxystyrene-styrene **copolymer 220767-20-4P**, p-tert-Butoxystyrene-2,5-dimethylhexane-2,5-diacrylate-p-hydroxystyrene **copolymer 292840-55-2P**, p-tert-Butoxystyrene-tert-butyl **acrylate** -p-hydroxystyrene **copolymer**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(preparation of radiation-sensitive resin for **chemical**

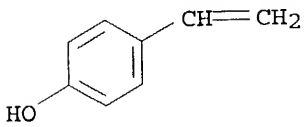
amplified resist compns.)

RN 200808-68-0 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

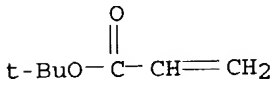
CM 1

CRN 2628-17-3
CMF C8 H8 O



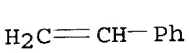
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8

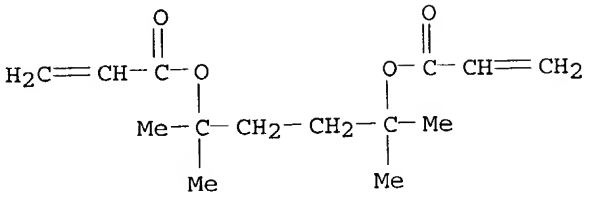


RN 220767-18-0 CAPLUS

CN 2-Propenoic acid, 1,1,4,4-tetramethyl-1,4-butanediyl ester, polymer with 1,1-dimethylethyl 2-propenoate, ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

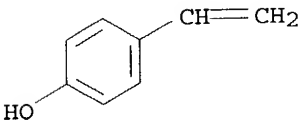
CM 1

CRN 188837-15-2
CMF C14 H22 O4



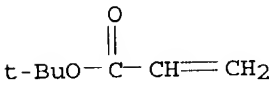
CM 2

CRN 2628-17-3
CMF C8 H8 O



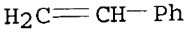
CM 3

CRN 1663-39-4
CMF C7 H12 O2



CM 4

CRN 100-42-5
CMF C8 H8

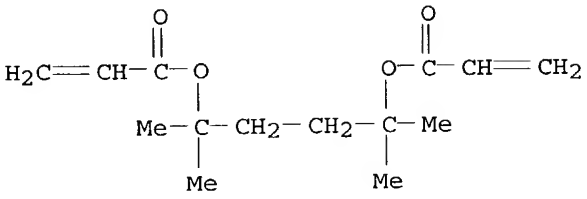


RN 220767-20-4 CAPLUS
CN 2-Propenoic acid, 1,1,4,4-tetramethyl-1,4-butanediyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

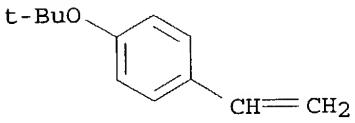
CRN 188837-15-2

CMF C14 H22 O4



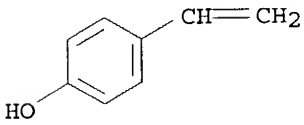
CM 2

CRN 95418-58-9
CMF C12 H16 O



CM 3

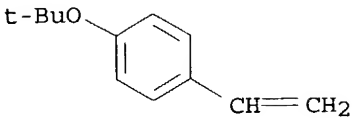
CRN 2628-17-3
CMF C8 H8 O



RN 292840-55-2 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

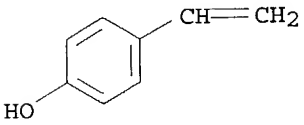
CM 1

CRN 95418-58-9
CMF C12 H16 O



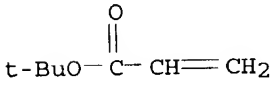
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



IC ICM C07D209-48
ICS C07D209-76; G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **chem amplified resist** photoresist radiation sensitive resin compn; sulfonyloxyimide photoacid generator PAG **resist** polymer compn prepn
IT **Photoresists**
(radiation-sensitive resin composition comprising N-sulfonyloxyimide compound
as an acid-generating agent for **chemical amplified resists**)
IT 339570-78-4P 339570-79-5P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(acid-generating agent; preparation of N-sulfonyloxyimide compound for **chemical amplified resist** compns. as radiation-sensitive acid-generating agent)
IT 78-67-1, AIBN

KOROMA EIC1700

RL: NUU (Other use, unclassified); USES (Uses)
(preparation of N-sulfonyloxyimide compound for **chemical amplified resist** compns.)

IT 7398-76-7P
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of N-sulfonyloxyimide compound for **chemical amplified resist** compns.)

IT 6066-82-6, N-Hydroxysuccinimide 7631-90-5, Sodium bisulfite 7719-09-7, Thionyl chloride 39743-84-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of N-sulfonyloxyimide compound for **chemical amplified resist** compns.)

IT 310436-72-7P 339570-77-3P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of N-sulfonyloxyimide compound for **chemical amplified resist** compns.)

IT 24979-70-2DP, Poly(p-hydroxystyrene), reaction products with di-t-Bu carbonate or cyclohexyl vinyl ether or Et vinyl ether or ethyl-1-propenyl ether 95418-60-3DP, Poly(p-tert-Butoxystyrene), partially hydrolyzed, reaction products with cyclohexyl vinyl ether **200808-68-0P**, tert-Butyl **acrylate**-p-Hydroxystyrene-styrene **copolymer** **220767-18-0P**, tert-Butyl **acrylate**-2,5-dimethylhexane-2,5-diacrylate-p-hydroxystyrene-styrene **copolymer** **220767-20-4P**, p-tert-Butoxystyrene-2,5-dimethylhexane-2,5-diacrylate-p-hydroxystyrene **copolymer** 288622-96-8P, p-tert-Butoxystyrene-p-Hydroxystyrene-styrene **copolymer** **292840-55-2P**, p-tert-Butoxystyrene-tert-butyl **acrylate**-p-hydroxystyrene **copolymer**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(preparation of radiation-sensitive resin for **chemical amplified resist** compns.)

IT 109-92-2D, Ethyl vinyl ether, reaction products with poly(p-hydroxystyrene) 928-55-2D, Ethyl-1-propenyl ether, reaction products with poly(p-hydroxystyrene) 2182-55-0D, Cyclohexyl vinyl ether, reaction products with poly(p-hydroxystyrene) 34619-03-9D, Di-tert-butyl carbonate, reaction products with poly(p-hydroxystyrene)
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of radiation-sensitive resin for **chemical amplified resist** compns.)

IT 72317-19-2, Hydroxystyrene-styrene **copolymer**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(radiation-sensitive resin composition comprising N-sulfonyloxyimide compound
as an acid-generating agent and)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 41 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:62633 CAPLUS
DOCUMENT NUMBER: 134:123584
TITLE: **Resist** resin for **chemically amplified resist** composition and method for pattern formation using same
INVENTOR(S): Fujiwara, Tadayuki; Wakisaka, Yukiya; Murata, Naoshi
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001022074	A2	20010126	JP 1999-198163	19990712

PRIORITY APPLN. INFO.: JP 1999-198163 19990712

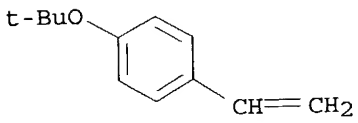
AB The resin is prepared from at least one of monomers of **acrylonitrile**, vinyl acetate, and N-methylolacrylamide and becomes alkali soluble upon reacting with an acid. The resin provides the high dry-etching **resistance.**

IT **321309-67-5P**, p-tert-Butoxystyrene-p-Hydroxystyrene-**acrylonitrile copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**resist** resin for **chemical amplified resist** composition)

RN 321309-67-5 CAPLUS
CN 2-Propenenitrile, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

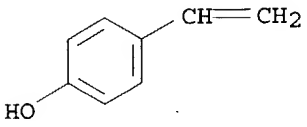
CM 1

CRN 95418-58-9
CMF C12 H16 O



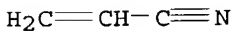
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 107-13-1
CMF C3 H3 N



IC ICM G03F007-039
ICS C08F220-26; C08F220-44; C08F220-56; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST amplified **resist** resin compn
IT Light-sensitive materials
Photoresists
(**resist** resin for **chemical amplified** **resist** composition and method for pattern formation using same)
IT **321309-67-5P**, p-tert-Butoxystyrene-p-Hydroxystyrene-**acrylonitrile copolymer** 321309-68-6P, p-tert-Butoxystyrene-p-Hydroxystyrene-N-Methylolmethacrylamide **copolymer** 321309-69-7P, 2-Methyl-2-adamantylmethacrylate-β-Methacryloyloxy-γ-butyrolactone- **acrylonitrile** **copolymer** 321309-70-0P, 2-Methyl-2-adamantylmethacrylate-β-Methacryloyloxy-γ-butyrolactone-N-methylolmethacrylamide **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**resist** resin for **chemical amplified** **resist** composition)

L26 ANSWER 42 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:876779 CAPLUS
DOCUMENT NUMBER: 134:49215
TITLE: A **resist** composition
INVENTOR(S): Hujie, Hirotoshi; Maesawa, Tsuneaki; Mori, Yasuyoshi
PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Japan
SOURCE: Eur. Pat. Appl., 39 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1059314	A1	20001213	EP 2000-112208	20000607
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001151824	A2	20010605	JP 2000-161500	20000531
SG 85188	A1	20011219	SG 2000-3078	20000602
US 6432608	B1	20020813	US 2000-589770	20000609
US 2003039920	A1	20030227	US 2002-178239	20020625

PRIORITY APPLN. INFO.: JP 1999-162540 A 19990609
JP 1999-259338 A 19990913
US 2000-589770 A3 20000609

AB This invention relates to a polymer capable of forming an ultra-fine pattern with excellent rectangular shape in a silylated surface resolution process using a **chemical amplified** type **resist** composition as single layer or the most upper layer among multiple layers and to a **resist** composition using the polymer. The said polymer and **resist** composition are useful in a silylated surface resolution process, and by conducting the silylated surface resolution process using the said **resist** composition, contrast of silylation becomes higher and it becomes possible to obtain ultra-fine pattern regardless of the kind of exposure energy.

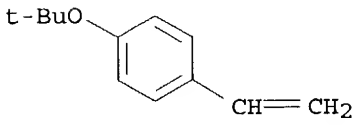
IT **313065-75-7DP**, p-tert-Butoxystyrene-cyclohexyl **acrylate copolymer**, hydrolyzed, reaction products with Et vinyl ether and di-tert-Bu dicarbonate **313065-77-9DP**, p-tert-Butoxystyrene-isobornyl **acrylate copolymer**, hydrolyzed, reaction products with Et vinyl ether and dihydropyran or only Et vinyl ether
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**resist** composition)

RN 313065-75-7 CAPLUS

CN 2-Propenoic acid, cyclohexyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene (9CI) (CA INDEX NAME)

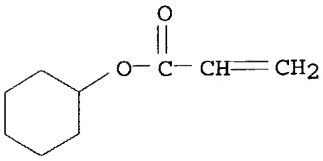
CM 1

CRN 95418-58-9
CMF C12 H16 O



CM 2

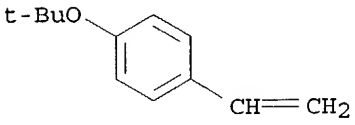
CRN 3066-71-5
CMF C9 H14 O2



RN 313065-77-9 CAPLUS
CN 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

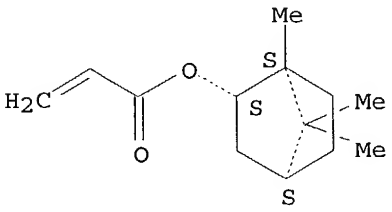
CRN 95418-58-9
CMF C12 H16 O



CM 2

CRN 5888-33-5
CMF C13 H20 O2

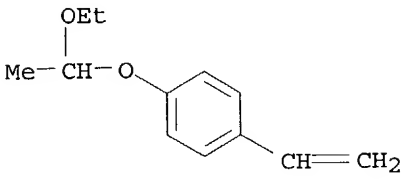
Relative stereochemistry.



IT **313065-78-0**, p-tert-Butoxycarbonyloxy styrene-p-1-(ethoxyethoxy) styrene-methyl methacrylate **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(**resist** composition)
RN 313065-78-0 CAPLUS
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,1-dimethylethyl 4-ethenylphenyl carbonate and 1-ethenyl-4-(1-ethoxyethoxy)benzene (9CI) (CA INDEX NAME)

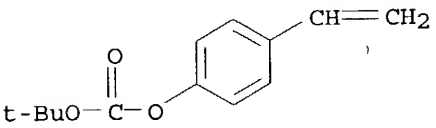
CM 1

CRN 157057-20-0
CMF C12 H16 O2



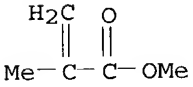
CM 2

CRN 87188-51-0
CMF C13 H16 O3



CM 3

CRN 80-62-6
CMF C5 H8 O2



IC ICM C08F212-14
ICS C08F008-00; G03F007-039; G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37
ST photoresist styrene **acrylic** polymer
IT **Photoresists**
(UV; **resist** composition)
IT **Acrylic** polymers, preparation
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(styrene-containing; **resist** composition)
IT Synthetic polymeric fibers, preparation
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered

material use); **PREP (Preparation)**; USES (Uses)
(styrene; **resist** composition)

IT 109-92-2, Ethyl vinyl ether 110-87-2 24424-99-5, Di-tert-butyl dicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(**resist** composition)

IT 95418-60-3DP, p-tert-Butoxystyrene homopolymer, partially hydrolyzed, reaction products with Et vinyl ether **313065-75-7DP**, p-tert-Butoxystyrene-cyclohexyl **acrylate copolymer**, hydrolyzed, reaction products with Et vinyl ether and di-tert-Bu dicarbonate **313065-77-9DP**, p-tert-Butoxystyrene-isobornyl **acrylate copolymer**, hydrolyzed, reaction products with Et vinyl ether and dihydropyran or only Et vinyl ether
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**resist** composition)

IT 171429-60-0 177034-67-2 177034-74-1 **313065-78-0**, p-tert-Butoxycarbonyloxy styrene-p-1-(ethoxyethoxy) styrene-methyl methacrylate **copolymer** 313065-79-1 313065-80-4 313065-82-6 313065-85-9 313065-87-1
RL: TEM (Technical or engineered material use); USES (Uses)
(**resist** composition)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 43 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:706345 CAPLUS
DOCUMENT NUMBER: 133:288877
TITLE: Oxime derivates and their use as photosensitive acid donors in **chemically amplified** photoresist compositions.
INVENTOR(S): Asakura, Toshikage; Yamato, Hitoshi; Ohwa, Masaki; Birbaum, Jean-Luc; Dietliker, Kurt; Tanabe, Junichi
PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.
SOURCE: Ger. Offen., 62 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10015255	A1	20001005	DE 2000-10015255	20000328
US 6261738	B1	20010717	US 2000-533952	20000323
AU 766803	B2	20031023	AU 2000-24200	20000330
AU 2000024200	A5	20001005		

PRIORITY APPLN. INFO.:
DE 1999-99810273 A1 19990331
DE 1999-99810287 A1 19990407
DE 1999-99810779 A1 19990830
EP 1999-810273 A 19990331
EP 1999-810287 A 19990407

EP 1999-810779 A 19990830
US 2000-533952 A 20000323
DE 2000-10015255 A 20000328

OTHER SOURCE(S): MARPAT 133:288877

AB **Chemical amplified** photoresist compns. are described which contains a compound that is hardenable under the effect of an acid or becomes more soluble under the effect of an acid and an oxime derivative as a photosensitive acid donor. Thus, a composition containing Maruka Lyncur PHS/STY/TBA **copolymer**, FC 340 flow agent, propylene glycol Me ether acetate, and 2,2,2-trifluoro-1-phenylethanone oxime O-(2,4,6-trimethylphenylsulfonate) was coated on a Si wafer to give a pos.-working **resist**, dried, UV exposed, heated and then developed with aqueous tetramethylammonium hydroxide solution to show a clearing dose of 0.10 mJ/cm2.

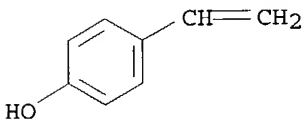
IT **200808-68-0**, p-Hydroxystyrene-styrene-tert-butyl **acrylate copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(photosensitive acid donors in **chemical amplified** photoresist compns.)

RN 200808-68-0 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

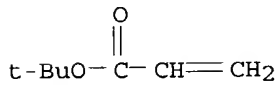
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

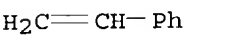
CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST oxime photosensitive acid donor **chem amplified** photoresist
IT **Photoresists**
(photosensitive acid donors in **chemical amplified** photoresist compns.)
IT Oximes
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photosensitive acid donors in **chemical amplified** photoresist compns.)
IT Aminoplasts
RL: TEM (Technical or engineered material use); USES (Uses)
(photosensitive acid donors in **chemical amplified** photoresist compns.)
IT 135481-98-0P 300373-66-4P 300373-67-5P 300373-68-6P 300373-71-1P
300373-77-7P 300373-79-9P 300373-80-2P 300373-81-3P 300373-82-4P
300373-88-0P 300373-90-4P 300373-91-5P 300373-94-8P 300374-16-7P
300374-18-9P 300374-20-3P 300374-22-5P 300374-24-7P 300374-26-9P
300374-28-1P 300374-30-5P 300374-31-6P 300374-32-7P 300374-34-9P
300374-36-1P 300374-37-2P 300374-39-4P 300374-41-8P 300374-43-0P
300374-45-2P 300374-46-3P 300374-48-5P 300374-50-9P 300374-52-1P
300374-56-5P 300374-58-7P 300374-59-8P 300374-60-1P 300374-61-2P
300374-64-5P 300374-65-6P 300374-67-8P 300374-70-3P 300374-71-4P
300374-74-7P 300374-75-8P 300374-76-9P 300374-78-1P 300374-82-7P
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photosensitive acid donors in **chemical amplified** photoresist compns.)
IT 85-46-1, 1-Naphthylsulfonyl chloride 91-16-7 93-11-8, 2-Naphthylsulfonyl chloride 95-46-5, 2-Bromotoluene 98-68-0, 4-Methoxyphenylsulfonyl chloride 100-66-3, reactions 100-68-5, Thioanisole 108-38-3, reactions 108-67-8, Mesitylene, reactions 108-88-3, Toluene, reactions 124-63-0, Methylsulfonyl chloride 383-63-1, Ethyl trifluoroacetate 407-25-0, Trifluoroacetic acid anhydride 726-44-3, 1,3-Diphenoxypropane 773-64-8, 2,4,6-Trimethylphenylsulfonyl chloride 5470-11-1, Hydroxylammonium chloride 10147-36-1, 1-Propanesulfonyl chloride 21286-54-4, 10-Camphorsulfonyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(photosensitive acid donors in **chemical amplified** photoresist compns.)

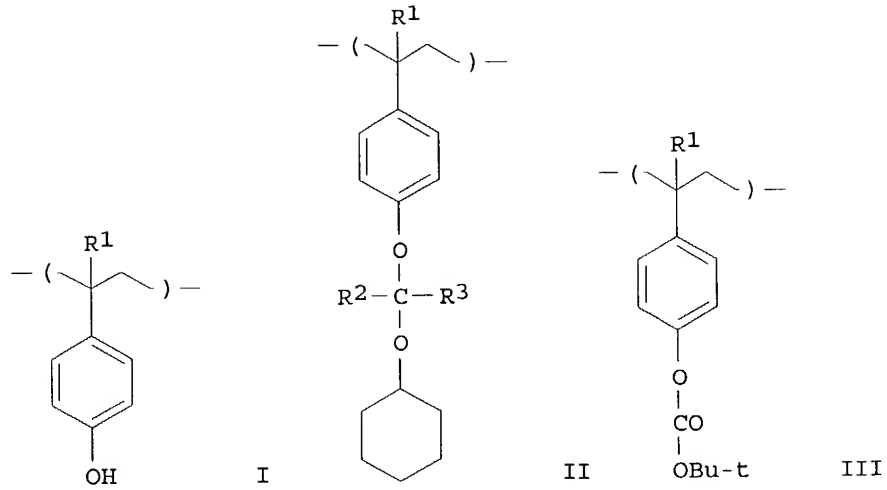
IT 313-56-4P 341-39-9P 387-57-5P 394-59-2P 434-45-7P,
2,2,2-Trifluoro-1-phenylethanone 559-91-1P 655-25-4P 711-38-6P,
2,2,2-Trifluoro-1-(4-methoxyphenyl)ethanone 16184-87-5P 70783-32-3P
75703-25-2P 83163-75-1P 83163-76-2P 83163-79-5P 92512-69-1P
98503-50-5P 122243-33-8P 149774-08-3P 175698-47-2P 253585-96-5P
300373-69-7P 300373-70-0P 300373-72-2P 300373-73-3P 300373-74-4P
300373-75-5P 300373-76-6P 300373-78-8P 300373-84-6P 300373-86-8P
300373-92-6P 300373-93-7P 300373-96-0P 300374-00-9P 300374-01-0P
300374-02-1P 300374-06-5P 300374-08-7P 300374-09-8P 300374-11-2P
300374-14-5P 300374-15-6P 300374-51-0P 300374-63-4P 300374-66-7P
300374-68-9P 300374-69-0P 300374-72-5P 300374-73-6P 300374-77-0P
300374-79-2P 300374-80-5P 300374-81-6P 300374-83-8P 300374-84-9P
300374-85-0P 300374-86-1P 300374-87-2P 300374-88-3P 300374-89-4P
300374-90-7P 300374-91-8P 300374-92-9P 300374-93-0P 300374-94-1P
300374-95-2P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photosensitive acid donors in **chemical amplified** photoresist compns.)

IT 9011-05-6, MX 290 24979-70-2, VP 8000 **200808-68-0**,
p-Hydroxystyrene-styrene-tert-butyl **acrylate copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(photosensitive acid donors in **chemical amplified** photoresist compns.)

L26 ANSWER 44 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:624804 CAPLUS
DOCUMENT NUMBER: 133:230379
TITLE: Radiation-sensitive **chemically amplified** positive-working **resist** resin composition
INVENTOR(S): Kobayashi, Eiichi; Yokoyama, Kenichi; Nishimura, Yukio
PATENT ASSIGNEE(S): JSR Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000241980	A2	20000908	JP 1999-362868	19991221
SG 81342	A1	20010619	SG 1999-6524	19991222

PRIORITY APPLN. INFO.: JP 1998-364905 A 19981222
GI



AB The radiation-sensitive **chemical amplified** pos.-working **resist** resin composition contains a **copolymer** having repeating unit I(R1 = H, methyl) and II (R1-2 = H, methyl; R3 = Me, ethyl), a **copolymer** having repeating unit III (R1 = H, methyl), and a photoacid generator. The addition of the resins to the composition provides the excellent sensitivity, resolution, and pattern shapes.

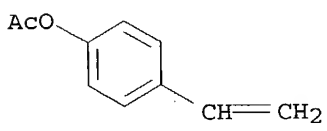
IT **174476-25-6P**, 4-Acetoxystyrene-tert-butyl **acrylate copolymer** **291282-97-8DP**, 4-tert-Butoxystyrene-**acrylonitrile copolymer**, reaction products with di-tert-Bu carbonate
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(radiation-sensitive **chemical amplified** pos.-working **resist** resin composition)

RN 174476-25-6 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

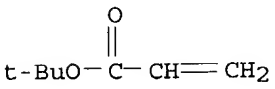
CM 1

CRN 2628-16-2
CMF C10 H10 O2



CM 2

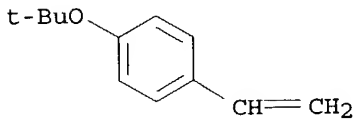
CRN 1663-39-4
CMF C7 H12 O2



RN 291282-97-8 CAPLUS
CN 2-Propenenitrile, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene (9CI) (CA INDEX NAME)

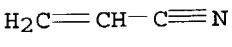
CM 1

CRN 95418-58-9
CMF C12 H16 O



CM 2

CRN 107-13-1
CMF C3 H3 N



IC ICM G03F007-039
ICS H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST radiation **chem amplified** pos **resist** compn
IT **Photoresists**
(**chemical amplified**, pos.-working; radiation-sensitive **chemical amplified** pos.-working **resist** resin composition)
IT 24979-74-6P, 4-Vinylphenol-styrene **copolymer** 95418-60-3P, 4-tert-Butoxystyrene homopolymer **174476-25-6P**, 4-Acetoxystyrene-tert-butyl **acrylate copolymer** **291282-97-8DP**, 4-tert-Butoxystyrene-**acrylonitrile** **copolymer**, reaction products with di-tert-Bu carbonate
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP**

(**Preparation**); RACT (Reactant or reagent)
(radiation-sensitive **chemical amplified** pos.-working **resist** resin composition)

IT 34619-03-9DP, Di-tert-butyl carbonate, 4-tert-Butoxystyrene-**acrylonitrile copolymer** 95418-60-3DP, 4-tert-Butoxystyrene homopolymer, reaction products with di-tert-Bu carbonate 199432-81-0P 287381-51-5P 291282-95-6P 291282-96-7P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive **chemical amplified** pos.-working **resist** resin composition)

L26 ANSWER 45 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:493204 CAPLUS
DOCUMENT NUMBER: 133:112405
TITLE: Hydroxystyrene **copolymers** and **photoresists** comprising same
INVENTOR(S): Pandya, Ashish; Sinta, Roger F.; Ito, Hiroshi
PATENT ASSIGNEE(S): Shipley Company LLC, USA; International Business Machines Corporation
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1020768	A1	20000719	EP 1999-125638	19991222
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000284483	A2	20001013	JP 2000-38851	20000112

PRIORITY APPLN. INFO.: US 1999-228694 A 19990112

AB The present invention relates to new **copolymers** and use of such **copolymer** as a resin binder component for photoresist compns., particularly **chemical-amplified** pos.-acting **resists.** Polymers of the invention include repeat units of (1) meta-hydroxystyrene groups, (2) para-hydroxystyrene groups, and (3) photo-acid-labile groups.

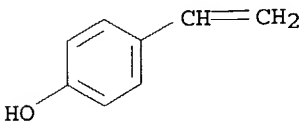
IT **257288-16-7P**, p-Hydroxystyrene-m-hydroxystyrene-tert-butyl **acrylate copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(hydroxystyrene **copolymer** in **photoresists** composition)

RN 257288-16-7 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 3-ethenylphenol and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

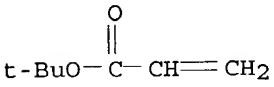
CRN 2628-17-3

CMF C8 H8 O



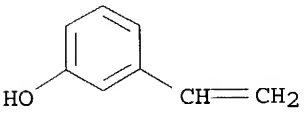
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 620-18-8
CMF C8 H8 O



IC ICM G03F007-039
ICS C08F212-14; C08F012-24
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 76
ST hydroxystyrene **copolymer** photoresist binder
IT **Photoresists**
Semiconductor device fabrication
(hydroxystyrene **copolymer** in **photoresists** composition as binder)
IT **257288-16-7P**, p-Hydroxystyrene-m-hydroxystyrene-tert-butyl **acrylate copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(hydroxystyrene **copolymer** in **photoresists** composition)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 46 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:317214 CAPLUS
DOCUMENT NUMBER: 132:341195
TITLE: **Chemically amplified** photoresist composition
INVENTOR(S): Choi, Sang Joon
PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000137328	A2	20000516	JP 1999-307678	19991028
JP 3501988	B2	20040302		
KR 2000027737	A	20000515	KR 1998-45736	19981029
TW 422940	B	20010221	TW 1999-88100758	19990119
US 6114422	A	20000905	US 1999-313808	19990518

PRIORITY APPLN. INFO.: KR 1998-45736 A 19981029

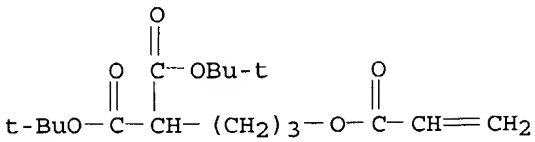
AB The title **resist** composition comprises a photosensitive polymer of the formula [CH2CH(C6H4OH-p)]k[CH2CR1(CO2(CH2)xCH(CO2R2)2)]l [I; R1 = H, Me; R2 = tert-Bu, tetrahydropyranyl, 1-alkoxyethyl; x = 1-4; k/(k + l) = 0.5-0.9] and a photoacid generator 1-15 weight% of the polymer. The **resist** composition comprises a polymer blend of I and [CH2CH(C6H4OH-p)]m[CH2CH(C6H4OR3-p)]n [R3 = tert-BU, tetrahydropyranyl, 1-alkoxyethyl, tert-butoxycarbonyl; m/(m + n) = 0.5-0.9] and a photoacid generator 1-15 weight% of the polymer blend. The composition provides a high contrast pattern showing good thermal characteristics.

IT **268550-94-3DP**, 4-Acetoxystyrene-di-tert-butylmalonylpropyl **acrylate copolymer**, hydrolyzed
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photoresist composition containing **acrylic** acid ester-hydroxystyrene **copolymer** and acid generator)

RN 268550-94-3 CAPLUS
CN Propanedioic acid, [3-[(1-oxo-2-propenyl)oxy]propyl]-, bis(1,1-dimethylethyl) ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

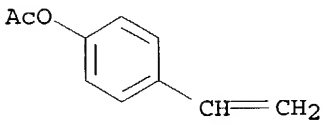
CM 1

CRN 268550-93-2
CMF C17 H28 O6



CM 2

CRN 2628-16-2
CMF C10 H10 O2



IC ICM G03F007-039
ICS C08F008-12; C08F212-14; C08L025-18; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST **chem amplification** photoresist hydroxystyrene **acrylate copolymer**; photoacid generator photoresist; polymer blend polyhydroxystyrene deriv photoresist

IT **Photoresists**
(**chemical amplification**-type photoresist containing **acrylate**-hydroxystyrene **copolymer** and photoacid generator)

IT Polymer blends
RL: TEM (Technical or engineered material use); USES (Uses)
(**chemical amplification**-type photoresist containing polymer blend of **acrylate**-hydroxystyrene **copolymer** and hydroxystyrene derivative polymer)

IT 102-71-6, uses 111-42-2, Diethanolamine, uses 121-44-8, uses 1116-40-1, Triisobutylamine
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(photoresist composition containing **acrylic** acid ester-hydroxystyrene **copolymer** and acid generator)

IT 109-92-2DP, Ethyl vinyl ether, ethers with polyhydroxystyrene 110-87-2DP, ethers with polyhydroxystyrene 59269-51-1DP, Poly(hydroxystyrene), ethers 155214-68-9P, Poly(hydroxystyrene) tert-butylcarbonate **268550-94-3DP**, 4-Acetoxystyrene-di-tert-butylmalonylpropyl **acrylate copolymer**, hydrolyzed
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photoresist composition containing **acrylic** acid ester-hydroxystyrene

copolymer and acid generator)

IT 34684-40-7, N-Hydroxysuccinimide triflate 66003-78-9, Triphenylsulfonium triflate
RL: TEM (Technical or engineered material use); USES (Uses)
(photoresist composition containing **acrylic** acid ester-hydroxystyrene **copolymer** and acid generator)

IT 268550-93-2P
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and polymerization of)

IT 541-16-2, Di-tert-butyl malonate 4823-47-6, 2-Bromoethyl **acrylate**
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of butylmalonylpropyl **acrylate**)

L26 ANSWER 47 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:316980 CAPLUS
DOCUMENT NUMBER: 132:341190
TITLE: Photosensitive polymer for **chemically amplified resists** and **chemically amplified resist** composition containing same
INVENTOR(S): Choi, Sang Joon
PATENT ASSIGNEE(S): Samsung Electronics Co., Ltd., S. Korea
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000136219	A2	20000516	JP 1999-307677	19991028
TW 440746	B	20010616	TW 1999-88100759	19990119
US 6294630	B1	20010925	US 1999-372016	19990811
US 2002026022	A1	20020228	US 2001-915670	20010726
US 6515038	B2	20030204		

PRIORITY APPLN. INFO.: KR 1998-45737 A 19981029
US 1999-372016 A3 19990811

AB The title polymer has the general formula [CH2CR1(CO2(CH2)xCH(CO2R2)2)]l[CH2CR3(CO2R4)]m[CH2CR5(C6H4OH-p)]n [R1, R3, R5 = H, Me; R2 = tert-Bu, tetrahydropyranyl, 1-alkoxyethyl; R4 = H, Me, tert-Bu, tetrahydropyranyl, 1-alkoxyethyl; x = 1-4; l/(l + m + n) = 0.1-0.5; m/(l + m + n) = 0.01-0.5; (l + m)/(l + m + n) = 0.1-0.7]. The **resist** composition contains the polymer and a photoacid generator 1-15 weight% of the polymer. The polymer shows increased solubility difference prior to and after exposure, and hence the **resist** composition provides high contrast patterns.

IT **267899-93-4DP**, hydrolyzed **267899-94-5DP**, hydrolyzed **267899-95-6DP**, hydrolyzed
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

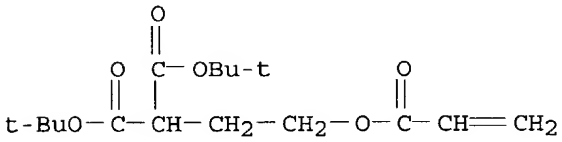
(photoresist composition containing **acrylic** acid ester-hydroxystyrene **copolymer** and acid generator)

RN 267899-93-4 CAPLUS

CN Propanedioic acid, [2-[(1-oxo-2-propenyl)oxy]ethyl]-, bis(1,1-dimethylethyl) ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

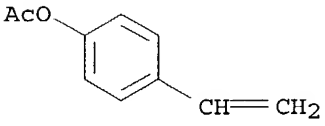
CM 1

CRN 267899-92-3
CMF C16 H26 O6



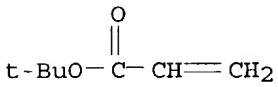
CM 2

CRN 2628-16-2
CMF C10 H10 O2



CM 3

CRN 1663-39-4
CMF C7 H12 O2

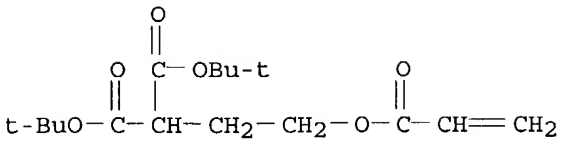


RN 267899-94-5 CAPLUS

CN Propanedioic acid, [2-[(1-oxo-2-propenyl)oxy]ethyl]-, bis(1,1-dimethylethyl) ester, polymer with 1,1-dimethylethyl 2-methyl-2-propenoate and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

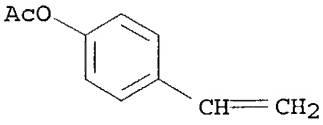
CM 1

CRN 267899-92-3
CMF C16 H26 O6



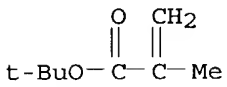
CM 2

CRN 2628-16-2
CMF C10 H10 O2



CM 3

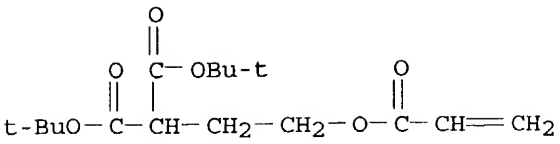
CRN 585-07-9
CMF C8 H14 O2



RN 267899-95-6 CAPLUS
CN Propanedioic acid, [2-[(1-oxo-2-propenyl)oxy]ethyl]-, bis(1,1-dimethylethyl) ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

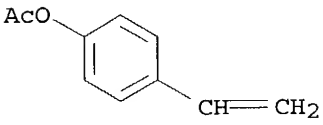
CM 1

CRN 267899-92-3
CMF C16 H26 O6



CM 2

CRN 2628-16-2
CMF C10 H10 O2



IC ICM C08F220-28
ICS C08F008-12; C08L033-00; G03F007-004; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **chem amplification** photoresist; malonylalkyl **acrylate copolymer** photoresist; hydroxystyrene **acrylate copolymer** photoresist; acid generator photoresist
IT **Photoresists**
(photoresist composition containing **acrylic** acid ester-hydroxystyrene **copolymer** and acid generator)
IT **267899-93-4DP**, hydrolyzed **267899-94-5DP**, hydrolyzed **267899-95-6DP**, hydrolyzed
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photoresist composition containing **acrylic** acid ester-hydroxystyrene **copolymer** and acid generator)
IT 66003-78-9, Triphenylsulfonium triflate
RL: TEM (Technical or engineered material use); USES (Uses)
(photoresist composition containing **acrylic** acid ester-hydroxystyrene **copolymer** and acid generator)
IT 267899-92-3P
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation and polymerization of)
IT 541-16-2, Di-tert-butyl malonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of di-butylmalonylpropyl **acrylate**)
IT 4823-47-6, 2-Bromoethyl **acrylate**
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of dibutylmalonylpropyl **acrylate**)

L26 ANSWER 48 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:117258 CAPLUS
DOCUMENT NUMBER: 132:173395
TITLE: Radiation-sensitive composition for **chemically amplified** photoresist
INVENTOR(S): Pawlowski, Georg; Okazaki, Hiroshi; Kinoshita, Yoshiaki; Tsugama, Naoko; Hishida, Aritaka; Ma, Xiao-ming; Yamaguchi, Yuko
PATENT ASSIGNEE(S): Clariant International Ltd., Switz.
SOURCE: PCT Int. Appl., 133 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000008525	A1	20000217	WO 1999-JP4304	19990809
W: CN, JP, KR, SG, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1033624	A1	20000906	EP 1999-935116	19990809
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 6358665	B1	20020319	US 2000-529371	20000703

PRIORITY APPLN. INFO.: JP 1998-225029 A 19980807
JP 1999-87036 A 19990329
WO 1999-JP4304 W 19990809

AB A **chemical amplification**-type radiation-sensitive composition comprising a film-forming resin based on a hydroxystyrene in combination with an onium salt precursor capable of generating a fluorinated alkanesulfonic acid as a radiation-sensitive acid-generating agent. This composition is free from the occurrence of corrosion of an apparatus owing to outgassing, the formation of a T-type pattern and the change of line width caused by a delay of processing time, and can be used for achieving a high sensitivity and resolving power and a good and stable pattern formation.

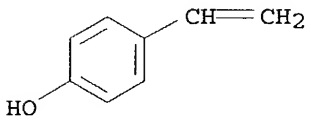
IT **155040-27-0P**, 4-Hydroxystyrene-tert-butyl methacrylate **copolymer 174476-25-6DP**, 4-Acetoxystyrene-4-tert-butyl **acrylate copolymer**, hydrolyzed, reaction products with Et vinyl ether **258872-02-5P**, 4-Hydroxystyrene-4-tert-butyloxycarbonyloxystyrene-tert-butyl methacrylate **copolymer 258872-15-0DP**, 4-Acetoxystyrene-styrene-tert-butyl methacrylate **copolymer**, reaction products with hydroxystyrene polymer derivative
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive composition for **chemical amplified** photoresist)

RN 155040-27-0 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with

4-ethenylphenol (9CI) (CA INDEX NAME)

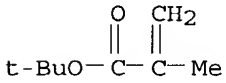
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

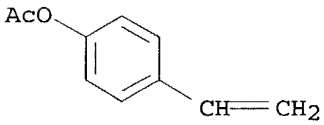
CRN 585-07-9
CMF C8 H14 O2



RN 174476-25-6 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

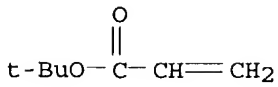
CM 1

CRN 2628-16-2
CMF C10 H10 O2



CM 2

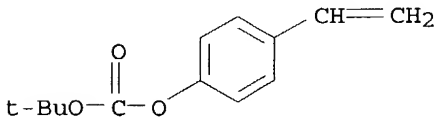
CRN 1663-39-4
CMF C7 H12 O2



RN 258872-02-5 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl 4-ethenylphenyl carbonate and 4-ethenylphenol (9CI) (CA INDEX NAME)

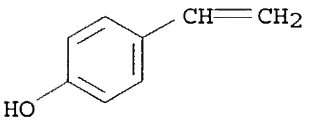
CM 1

CRN 87188-51-0
CMF C13 H16 O3



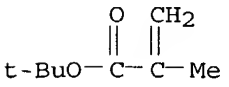
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

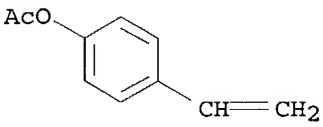
CRN 585-07-9
CMF C8 H14 O2



RN 258872-15-0 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

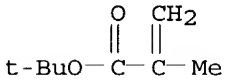
CM 1

CRN 2628-16-2
CMF C10 H10 O2



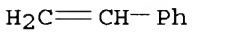
CM 2

CRN 585-07-9
CMF C8 H14 O2



CM 3

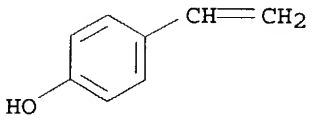
CRN 100-42-5
CMF C8 H8



IT **258871-96-4**, 4-Hydroxystyrene-styrene-tert-butyl methacrylate **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(radiation-sensitive composition for **chemical amplified** photoresist)
RN 258871-96-4 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

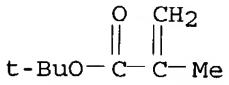
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

CRN 585-07-9
CMF C8 H14 O2



CM 3

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM G03F007-004
ICS G03F007-039; G03F007-038; C07C381-12; C07C309-06
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST radiation sensitive compn **chem amplification resist**
IT **Photoresists**
(radiation-sensitive composition for **chemical amplified** photoresist)
IT Onium compounds
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive composition for **chemical amplified** photoresist)
IT 258871-80-6P, Tris(4-hydroxyphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate
RL: PNU (Preparation, unclassified); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)
(radiation-sensitive composition for **chemical amplified** photoresist)
IT 76-05-1P, preparation 108-90-7P, Chlorobenzene, preparation 109-92-2DP, Ethylvinyl ether, reaction product with functionalized styrene polymer 110-75-8DP, 2-Chloroethylvinyl ether, reaction product with

4-hydroxystyrene homopolymer 536-80-1P, Iodosylbenzene 827-52-1P, Cyclohexylbenzene 2628-17-3P 5292-43-3DP, tert-Butylbromoacetate, reaction product with hydrolyzed 4-tert-Bu polymer 7758-05-6P, Potassium iodate 12124-97-9P, Ammonium bromide 18995-35-2P 24979-70-2DP, 4-Hydroxystyrene homopolymer, reaction product with functionalized vinyl compound 34619-03-9DP, Di-tert-butylcarbonate, reaction product with 4-hydroxystyrene homopolymer 68734-62-3P, Trimethylsilylnonafluorobutane sulfonate 94287-61-3P 129361-29-1P 130100-38-8P 133685-94-6P 135648-85-0P, 4-Hydroxystyrene-4-methoxystyrene **copolymer** 144317-44-2P, Triphenylsulfonium nonafluorobutanesulfonate **155040-27-0P**, 4-Hydroxystyrene-tert-butyl methacrylate **copolymer** 158401-89-9P **174476-25-6DP**, 4-Acetoxystyrene-4-tert-butyl **acrylate copolymer**, hydrolyzed, reaction products with Et vinyl ether 175610-67-0P 176747-00-5P, Diphenyliodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 204065-67-8DP, 4-Hydroxystyrene-4-methylstyrene **copolymer**, reaction product with ethoxy vinyl ether 241806-75-7P, Tris(4-tert-butylphenyl)sulfonium nonafluorobutanesulfonate 258871-76-0P, Tris(4-tert-butylphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-78-2P, Tri(4-t-butoxyphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-81-7P, Tris(4-tert-butoxycarbonylmethoxyphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-83-9P, β-Oxocyclohexyl 2-norbonylmethyl sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-84-0P, Bis(4-cyclohexylphenyl)iodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-85-1P, 4-Methylphenylphenyliodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-86-2P, Bis(4-tert-butoxyphenyl)phenylsulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-88-4P, Bis(4-methylphenyl)-4-cyclohexylphenylsulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-89-5P, Tris(4-chlorophenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-90-8P, 4-Hydroxy-3,5-dimethylphenyldiphenylsulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-91-9P, Di(4-t-butyloxyphenyl)iodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-94-2P, Di(4-tert-butylcarbonyloxymethyloxyphenyl)iodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-95-3P, 4-tert-Butylphenylphenyliodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-97-5P, 4-Hydroxystyrene-4-tetrahydropyranyloxystyrene-α,ω-triethyleneglycol divinyl ether **copolymer** 258871-99-7P, Tris(tert-butylcarbonylmethyloxyphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258872-01-4P, Bis(4-cyclohexylphenyl)phenylsulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate **258872-02-5P**, 4-Hydroxystyrene-4-tert-butyloxycarbonyloxystyrene-tert-butyl methacrylate **copolymer** 258872-05-8P, Diphenyl 4-tert-butylphenylsufonium nonafluorobutanesulfonate 258872-08-1P, Tris(4-butoxyphenyl)sulfonium nonafluorobutanesulfonate 258872-10-5P, Tris(4-tert-butoxycarbonylmethoxyphenyl)sulfonium nonafluorobutanesulfonate 258872-13-8P 258872-14-9P, Bis(4-cyclohexylphenyl)iodonium nonafluorobutylsulfonate **258872-15-0DP**, 4-Acetoxystyrene-styrene-tert-butyl methacrylate **copolymer**, reaction products with

hydroxystyrene polymer derivative 258873-04-0P, Bis(4-hydroxyphenyliodonium) 3,3,3,2,1,1-hexafluoropropanesulfonate
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive composition for **chemical amplified** photoresist)

IT 67-68-5, Dimethyl sulfoxide, reactions 71-43-2, Benzene, reactions 75-75-2, Methanesulfonic acid 107-59-5, tert-Butyl chloroacetate 357-31-3 375-73-5 507-19-7, tert-Butyl bromide 591-50-4, Iodobenzene 945-51-7, Diphenylsulfoxide 3085-42-5, 4,4'-Dichlorophenyl sulfoxide 5292-43-3, tert-Butylbromoacetate 29342-65-2, 2-Bromonorbornane 137455-55-1, Tris(4-tert-butoxyphenyl)sulfonium 170632-59-4, Bis(4-tert-butoxyphenyl)sulfoxide 258872-06-9, Diphenyl 4-tert-butylphenylsufonium bromide 258872-11-6, Tris-4(tert-butoxyphenyl)sulfonium nonafluorobutanesulfonate 263871-53-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiation-sensitive composition for **chemical amplified** photoresist)

IT 216679-67-3, Megafac R 08 **258871-96-4**, 4-Hydroxystyrene-styrene-tert-butyl methacrylate **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(radiation-sensitive composition for **chemical amplified** photoresist)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 49 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:557773 CAPLUS
DOCUMENT NUMBER: 131:163395
TITLE: Method using photoresist composition and articles produced therewith
INVENTOR(S): Cameron, James F.; Rajaratnam, Martha M.; Sinta, Roger F.; Thackeray, James W.
PATENT ASSIGNEE(S): Shipley Company LLC, USA
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 938029	A2	19990825	EP 1999-102241	19990204
EP 938029	A3	20000329		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6048672	A	20000411	US 1998-27127	19980220
JP 11282168	A2	19991015	JP 1999-43762	19990222

PRIORITY APPLN. INFO.: US 1998-27127 19980220

AB The invention includes use of a pos. **chemical amplified** photoresist composition that produces a strong photogenerated acid. The

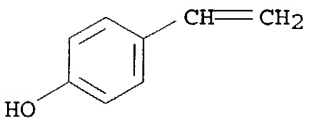
photoresist is coated onto a metal substrate that has been subjected to a stringent bake step, e.g. heating of the substrate at about at least 140° for more than 60 s. The combined use of a strong photogenerated acid and a stringent pre-coating substrate bake provides highly resolved relief **resist** images, including on metal substrates.

IT **159296-87-4**, tert-Butyl **acrylate**-4-hydroxystyrene **copolymer** **200808-68-0**, tert-Butyl **acrylate**-4-hydroxystyrene-styrene **copolymer**
RL: TEM (Technical or engineered material use); USES (Uses)
(pos. **chemical amplified photoresists** containing photoacid generators and)

RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

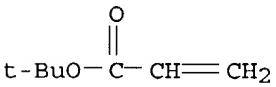
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

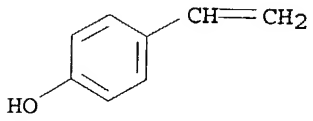
CRN 1663-39-4
CMF C7 H12 O2



RN 200808-68-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

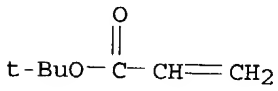
CM 1

CRN 2628-17-3
CMF C8 H8 O



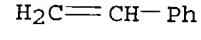
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8



IC ICM G03F007-16
ICS G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos **chem amplified** photoresist photogenerated acid
IT Silicate glasses
RL: TEM (Technical or engineered material use); USES (Uses)
(Boron phosphorus; highly resolved relief **resist** image formation using pos. **chemical amplified photoresists** coated on baked substrates of)
IT Positive **photoresists**
(**chemical amplified**; with strong photogenerated acids and coated on baked metal substrates)
IT 78-10-4, TEOS 11105-01-4, Silicon oxynitride 12033-89-5, Silicon nitride, uses 25583-20-4, Titanium nitride
RL: TEM (Technical or engineered material use); USES (Uses)
(highly resolved relief **resist** image formation using pos. **chemical amplified photoresists** coated on baked substrates of)
IT 24979-70-2D, Poly(4-hydroxystyrene), hydrogenated, modified with tert-Bu acetate **159296-87-4**, tert-Butyl **acrylate** -4-hydroxystyrene **copolymer 200808-68-0**, tert-Butyl **acrylate**-4-hydroxystyrene-styrene **copolymer**

RL: TEM (Technical or engineered material use); USES (Uses)
(pos. **chemical amplified photoresists** containing photoacid generators and)

IT 144089-15-6P 213740-80-8P 229326-00-5P, N-[(Perfluorooctanesulfonyl)oxy]-5-norbornene-2,3-dicarboximide
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(preparation and use as photoacid generator for pos. **chemical amplified photoresists**)

IT 98-06-6, tert-Butylbenzene 108-24-7, Acetic anhydride 307-35-7, Perfluorooctanesulfonyl fluoride 2795-39-3, Potassium perfluorooctanesulfonate 3353-89-7, Triphenylsulfonium bromide 7758-05-6, Potassium iodate 21715-90-2, N-Hydroxy-5-norbornene-2,3-dicarboximide
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(reaction in preparation of photoacid generator for pos. **chemical amplified photoresists**)

L26 ANSWER 50 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:513131 CAPLUS
DOCUMENT NUMBER: 131:293195
TITLE: Novel dissolution inhibitors based on calixarene derivatives for use in **chemical amplification resists**
AUTHOR(S): Ito, Hiroshi; Nakayama, Tomonari; Ueda, Mitsuru; Sherwood, Mark; Miller, Dolores
CORPORATE SOURCE: IBM Almaden Research Center, San Jose, CA, 95120, USA
SOURCE: Polymeric Materials Science and Engineering (1999), 81, 51-52
CODEN: PMSEDG; ISSN: 0743-0515
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

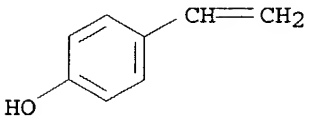
AB Calix[4]resorcinarenes were synthesized by condensing resorcinol with aldehydes (acetaldehyde, benzaldehyde, and 4-isopropylbenzaldehyde) and separated into C4v and C2v, isomers. All eight OH groups were protected with acid-labile groups such as tBOC and tBuOCOCH2. The protected calixarenes have been found to be excellent dissoln. inhibitors for use in **chemical amplification resists.**

IT **159296-87-4**, 4-Hydroxystyrene-tert-butyl **acrylate copolymer**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in **chemical amplification resists**)

RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

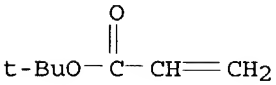
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
ST dissoln inhibitor calixarene **chem amplification** photoresist
IT Photolithography
Photoresists
Semiconductor device fabrication
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in **chemical amplification resists**)
IT Dendritic polymers
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in **chemical amplification resists**)
IT **159296-87-4**, 4-Hydroxystyrene-tert-butyl **acrylate copolymer**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in **chemical amplification resists**)
IT 74410-61-0DP, t-butoxycarbonyl- or t-butoxycabonylmethyl-protected 145843-14-7DP, t-butoxycarbonyl- or t-butoxycabonylmethyl-protected 246023-01-8P 246023-03-0P 246023-04-1DP, t-butoxycarbonyl- or t-butoxycabonylmethyl-protected 246023-06-3P 246024-56-6DP, t-butoxycarbonyl- or t-butoxycabonylmethyl-protected
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in **chemical amplification resists**)

IT 75-07-0, Acetaldehyde, reactions 100-52-7, Benzaldehyde, reactions 108-46-3, Resorcinol, reactions 122-03-2, 4-Isopropylbenzaldehyde 5292-43-3, tert-Butyl bromoacetate 24424-99-5, Di-tert-butyl dicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of novel dissoln. inhibitors based on calix[4]resorcinarenes for use in **chemical amplification resists**)

IT 74410-61-0P 74708-10-4P 145843-14-7DP, t-butoxycarbonyl- or t-butoxycabonylmethyl-protected 246023-04-1P 246023-05-2P 246024-56-6P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of novel dissoln. inhibitors based on calix[4]resorcinarenes for use in **chemical amplification resists**)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

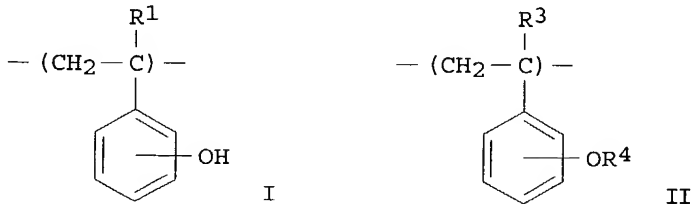
L26 ANSWER 51 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:182705 CAPLUS
DOCUMENT NUMBER: 130:259554
TITLE: Radiation-sensitive resin composition useful as **chemically amplified** positive-working **resist**
INVENTOR(S): Kobayashi, Eiichi; Yokoyama, Kenichi; Tanabe, Takaki; Iwanaga, Shinichiro
PATENT ASSIGNEE(S): JSR Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11072920	A2	19990316	JP 1997-244856	19970827

PRIORITY APPLN. INFO.: JP 1997-244856 19970827

GI



I II

AB The title resin composition contains (a) a **copolymer** having repeating

units I, CH2CR2(CO2CMe3), and II (R1-3 = H or Me; R4 = C4-10 tert-alkyl), (b) a radiation-sensitive acid-generator, and (c) an acid diffusion-controlling agent. The composition shows high sensitivity toward various kinds of radiations and processability in dark field and provides high resolution patterns with good profile.

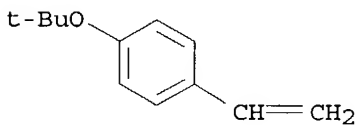
IT **221524-18-1DP**, p-Acetoxystyrene-p-tert-butoxystyrene-tert-butyl **acrylate copolymer**, hydrolyzed **221524-20-5P**, p-tert-Butoxystyrene-tert-butyl methacrylate-m-hydroxystyrene **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photoresist composition containing hydroxystyrene derivative polymer, acid generator, and acid diffusion-controlling agent)

RN 221524-18-1 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

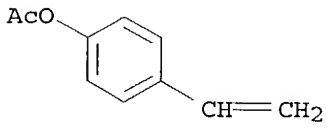
CM 1

CRN 95418-58-9
CMF C12 H16 O



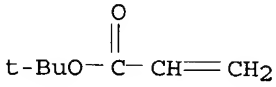
CM 2

CRN 2628-16-2
CMF C10 H10 O2



CM 3

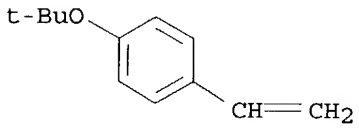
CRN 1663-39-4
CMF C7 H12 O2



RN 221524-20-5 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 3-ethenylphenol (9CI) (CA INDEX NAME)

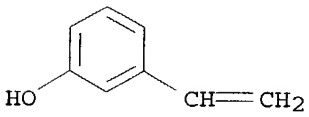
CM 1

CRN 95418-58-9
CMF C12 H16 O



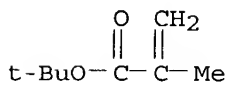
CM 2

CRN 620-18-8
CMF C8 H8 O



CM 3

CRN 585-07-9
CMF C8 H14 O2



IC ICM G03F007-039
ICS G03F007-004; G03F007-033; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

KOROMA EIC1700

Section cross-reference(s): 38

ST photoresist hydroxystyrene deriv polymer; acid generator photoresist; diffusion controlling agent acid photoresist

IT **Photoresists**
(photoresist composition containing hydroxystyrene derivative polymer, acid generator, and acid diffusion-controlling agent)

IT 102-86-3, Trihexylamine
RL: TEM (Technical or engineered material use); USES (Uses)
(acid diffusion-controlling agent; photoresist composition containing hydroxystyrene derivative polymer, acid generator, and acid diffusion-controlling agent)

IT **221524-18-1DP**, p-Acetoxystyrene-p-tert-butoxystyrene-tert-butyl **acrylate copolymer**, hydrolyzed **221524-20-5P**, p-tert-Butoxystyrene-tert-butyl methacrylate-m-hydroxystyrene **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(photoresist composition containing hydroxystyrene derivative polymer, acid generator, and acid diffusion-controlling agent)

IT 142342-33-4, Bis(4-tert-butylphenyl)iodonium p-toluenesulfonate 144317-44-2, Triphenylsulfonium nonafluorobutanesulfonate 194999-85-4, Bis(4-tert-butylphenyl)iodonium nonafluorobutanesulfonate 195723-94-5, 4-tert-Butoxyphenyl diphenyl sulfonium 10-camphorsulfonate 214534-44-8, Diphenyliodonium 10-camphorsulfonate 220535-23-9
RL: TEM (Technical or engineered material use); USES (Uses)
(photoresist composition containing hydroxystyrene derivative polymer, acid generator, and acid diffusion-controlling agent)

L26 ANSWER 52 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:795188 CAPLUS
DOCUMENT NUMBER: 130:45293
TITLE: Composition for antireflection or light absorption film and compounds for use in same
INVENTOR(S): Padmanaban, Munirathna; Kang, Wen-bing; Tanaka, Hatsuyuki; Kimura, Ken; Pawlowski, Georg
PATENT ASSIGNEE(S): Clariant International Ltd., Switz.
SOURCE: PCT Int. Appl., 65 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9854619	A1	19981203	WO 1998-JP2234	19980521
W: CN, JP, KR, SG, US				
RW: DE, FR, GB, IT				
TW 473653	B	20020121	TW 1998-87107647	19980518
EP 917002	A1	19990519	EP 1998-921751	19980521
R: DE, FR, GB, IT				
KR 2000029602	A	20000525	KR 1999-700666	19990126

PRIORITY APPLN. INFO.: JP 1997-137088 A 19970527
WO 1998-JP2234 W 19980521

AB A composition capable of forming an antireflection or light absorption film which satisfactorily absorbs radiations having wavelengths of 100 to 450 nm, is free from the diffusion of a photo-generated acid into the film or the intermixing of a **resist** with the film, and is excellent in storage stability and step coverage properties; and novel compds. and novel polymers useful for the composition The composition contains a compound which is a (meth)**acrylic** monomer or polymer having at least one isocyanate or thioisocyanate group bonded to a side chain thereof through an alkylene group, etc., or contains the compound or polymer which has an aminated or hydroxylated organic chromophore which absorbs light in the wavelength region of 100 to 450 nm and is bonded to the isocyanate or thioisocyanate group. The composition is applied to a substrate and baked to form a film serving as, e.g., an antireflection film. A **chemical-amplification**-type **resist** is applied to this film, and the **resist** film is exposed to light and then developed to form a **resist** image with high resolution Due to the presence of the isocyanate or thioisocyanate group in the compound, the film serving as, e.g., an antireflection film is cured through crosslinking during baking. Due to the presence of the organic chromophore, the film absorbs exposure light in the wavelength region of 100 to 450 nm.

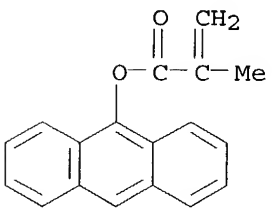
IT **216989-13-8P**, 9-Anthracene methacrylate-2-(methacryloyloxy)ethylisocyanate **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(composition for antireflection or light absorption film)

RN 216989-13-8 CAPLUS

CN 2-Propenoic acid, 2-methyl-, 9-anthracenyl ester, polymer with 2-isocyanatoethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

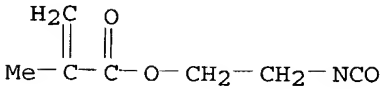
CM 1

CRN 32468-70-5
CMF C18 H14 O2



CM 2

CRN 30674-80-7
CMF C7 H9 N O3



IC ICM G03F007-11
ICS C08F020-34; C08F020-38; C08F020-10; C08F022-04; C08F022-40; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

ST antireflection light absorption film compn

IT Antireflective films
Photolithography
Photoresists
Semiconductor materials
(composition for antireflection or light absorption film and compds. for use in same)

IT 88007-27-6DP, reaction product with 1-aminoanthracene 100042-81-7DP, 2-Methacryloyloxyethylisocyanate-methylmethacrylate **copolymer**, reaction product with 1-aminoanthracene 216989-11-6P, 2-(Methacryloyloxy)ethyl isocyanate-maleic acid **copolymer**
RL: DEV (Device component use); PNU (Preparation, unclassified); **PREP (Preparation)**; USES (Uses)
(composition for antireflection or light absorption film)

IT 216989-12-7P, N-(2-Methacryloyloxyethyl)-9-methylanthracene carbamate-2-methacryloxyethyl acetate **copolymer** **216989-13-8P**, 9-Anthracene methacrylate-2-(methacryloyloxy)ethylisocyanate **copolymer** 216989-14-9P, N-(2-Methacryloyloxyethyl)-9-methylanthracene carbamate-methyl methacrylate-methacryloxyethyl isocyanate **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(composition for antireflection or light absorption film)

IT 62-53-3D, Aniline, reaction product with poly(2-methacryloyloxyethylisocyanate) 63-74-1D, 4-Aminobenzenesulfonamide, reaction product with poly(2-methacryloyloxyethylisocyanate) 90-15-3D, 1-Hydroxynaphthalene, reaction product with poly(2-methacryloyloxyethylisocyanate) 95-03-4D, 2-Amino-4-chloroanisole, reaction product with poly(2-methacryloyloxyethylisocyanate) 108-95-2D, Phenol, reaction product with poly(2-methacryloyloxyethylisocyanate), reactions 134-32-7D, 1-Aminonaphthalene, reaction product with poly(2-methacryloyloxyethylisocyanate) 610-49-1D, 1-Aminoanthracene, reaction product with poly(2-methacryloyloxyethylisocyanate) 708-06-5D, 2-Hydroxynaphthaldehyde, reaction product with poly(2-methacryloyloxyethylisocyanate) 782-45-6D, 4-Aminobenzanilide, reaction product with poly(2-methacryloyloxyethylisocyanate) 1468-95-7D, 9-Hydroxymethylanthracene, reaction product with poly(2-methacryloyloxyethylisocyanate) 1576-43-8D, 4-Hydroxybenzenesulfonamide, reaction product with poly(2-methacryloyloxyethylisocyanate) 1689-82-3D,

4-Hydroxyazobenzene, reaction product with poly(2-methacryloyloxyethylisocyanate) 3743-23-5D, 2-Hydroxy-4-chloroanisole, reaction product with poly(2-methacryloyloxyethylisocyanate) 6373-73-5D, reaction product with poly(2-methacryloyloxyethylisocyanate) 14121-97-2D, 4-Hydroxybenzanilide, reaction product with poly(2-methacryloyloxyethylisocyanate)
RL: RCT (Reactant); RACT (Reactant or reagent)
(composition for antireflection or light absorption film)
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 53 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:682070 CAPLUS
DOCUMENT NUMBER: 128:8767
TITLE: **Chemical amplification** and positive-working type **resist** laminate for manufacturing semiconductors and patterning using same
INVENTOR(S): Takahashi, Shinichi; Abe, Nobunori; Oikawa, Akira; Miyata, Shuichi
PATENT ASSIGNEE(S): Nippon Zeon Co., Ltd., Japan; Fujitsu Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09269597	A2	19971014	JP 1996-77274	19960329

PRIORITY APPLN. INFO.: JP 1996-77274 19960329

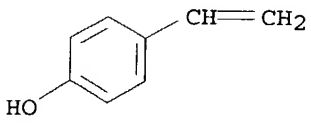
AB The **resist** laminate comprises a reflection-reducing layer on a layer with a highly reflective surface, and a photoresist layer containing a compound with an acid unstable tertiary amyl group. The **resist** laminate can be exposed by a laser radiation beam.

IT **155040-27-0P**, tert-Butyl methacrylate-p-vinylphenol **copolymer 180483-44-7P**, tert-Amyl methacrylate-p-vinylphenol **copolymer 198784-52-0P**, tert-Amyl **acrylate**-p-vinylphenol **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(prepared as acid unstable compound for **resist** laminate for manufacturing semiconductors)

RN 155040-27-0 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

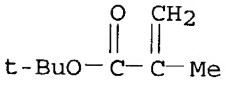
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

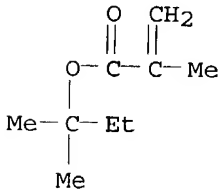
CRN 585-07-9
CMF C8 H14 O2



RN 180483-44-7 CAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylpropyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

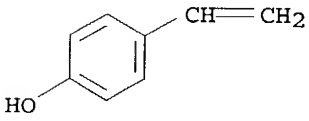
CM 1

CRN 7383-24-6
CMF C9 H16 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O

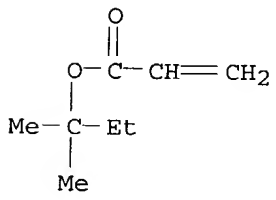


RN 198784-52-0 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylpropyl ester, polymer with 4-ethenylphenol

(9CI) (CA INDEX NAME)

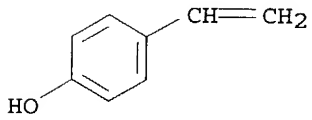
CM 1

CRN 7383-26-8
CMF C8 H14 O2



CM 2

CRN 2628-17-3
CMF C8 H8 O



IC ICM G03F007-039
ICS G03F007-004; G03F007-11; G03F007-30; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST **chem amplification** pos working **resist** laminate; acid unstable tertiary amyl **resist** laminate; semiconductor patterning photoresist laminate
IT Positive **photoresists**
(laminate; having reflection-reducing layer and photoresist layer containing acid unstable compound for manufacturing semiconductors and patterning
using same)
IT Semiconductor materials
(photoresist laminate having reflection-reducing layer and photoresist layer containing acid unstable compound for manufacture of)
IT **155040-27-0P**, tert-Butyl methacrylate-p-vinylphenol **copolymer** **180483-44-7P**, tert-Amyl methacrylate-p-vinylphenol **copolymer** **198784-52-0P**, tert-Amyl **acrylate**-p-vinylphenol **copolymer** 198784-54-2P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(prepared as acid unstable compound for **resist** laminate for

manufacturing semiconductors)

L26 ANSWER 54 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:532269 CAPLUS
DOCUMENT NUMBER: 127:128715
TITLE: **Chemical amplification**-type positive-working radiation-sensitive **resist** composition
INVENTOR(S): Suzuki, Masamutsu; Sakurai, Akihiko; Tanabe, Takayoshi; Isamoto, Yoshitsugu
PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09160244	A2	19970620	JP 1995-314061	19951201
JP 3345869	B2	20021118		
JP 2000066405	A2	20000303	JP 1999-228833	19990812
JP 3345881	B2	20021118		

PRIORITY APPLN. INFO.: JP 1995-314061 A3 19951201

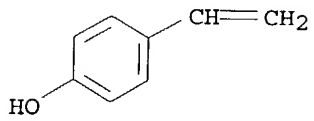
AB The composition contains a polymer having a t-Bu group decomposable by an acid, a polymer having an acetal- or ketal group decomposable by an acid, and a radiation-sensitive acid-generating agent. The composition gives a pattern with high resolution, and is useful for fabrication of such as integrated circuits. Thus, a **resist** composition containing poly(p-hydroxystyrene) whose H (in OH group) is partially substituted with t-butoxycarbonylmethyl group or 1-ethoxyethyl group, N-(trifluoromethylsulfonyloxy)bicyclo-[2,2,1]hepto-5-en-2,3-dicarboxyimide, and nicotinamide irradiated with an electron beam showed sensitivity 12 μC/cm2 to give 0.10 μm pattern.

IT **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer** **168274-87-1P**, tert-Butyl **acrylate** -p-isopropenylphenol **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(in **chemical amplification**-type pos.-working radiation-sensitive **resist** composition)

RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

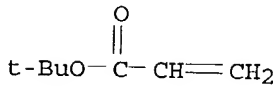
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

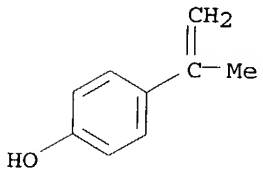
CRN 1663-39-4
CMF C7 H12 O2



RN 168274-87-1 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-(1-methylethenyl)phenol (9CI) (CA INDEX NAME)

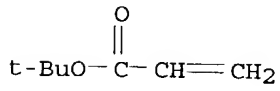
CM 1

CRN 4286-23-1
CMF C9 H10 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-039
ICS G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other

KOROMA EIC1700

Reprographic Processes)
Section cross-reference(s): 76
ST radiation sensitive **resist chem amplified**; integrated circuit manuf radiation sensitive **resist**; acetal polymer **resist** radiation sensitive; ketal polymer **resist** radiation sensitive
IT Electron beam **resists**
Ion beam **resists**
Photoresists
X-ray **resists**
(**chemical amplification**-type pos.-working radiation-sensitive **resist** composition)
IT 24979-70-2DP, Poly(p-hydroxystyrene), H (in OH group)-substituted 123589-22-0P **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer 168274-87-1P**, tert-Butyl **acrylate**-p-isopropenylphenol **copolymer** 182930-98-9P 192802-38-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(in **chemical amplification**-type pos.-working radiation-sensitive **resist** composition)
IT 107-25-5, Methyl vinyl ether 109-92-2 116-11-0 931-57-7, 1-Methoxycyclohexene 1191-99-7, 2,3-Dihydrofuran 5292-43-3, tert-Butyl bromoacetate 17327-22-9, 4-Methoxy-5,6-dihydro-2H-pyran 24424-99-5, Di-tert-butyl dicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of substituted poly(p-hydroxystyrene) in **chemical amplification**-type pos.-working radiation-sensitive **resist** composition)

L26 ANSWER 55 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:523263 CAPLUS
DOCUMENT NUMBER: 127:240860
TITLE: Environmentally stable **chemically amplified** positive **resist** containing vinyllactam terpolymers
AUTHOR(S): Bok, Cheol-Kyu; Koh, Cha-Won; Jung, Min-Ho; Baik, Ki-Ho; Kim, Jin-Baek; Cheong, Jong-Ho
CORPORATE SOURCE: Memory R&D Div., Hyundai Electronics Industries Co., Ltd., Kyoungki-do, 467-701, S. Korea
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1997), 3049(Advances in Resist Technology and Processing XIV), 501-511
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this paper we report here on lithog. performance of high resolution, environmentally stable and aqueous base developable pos. tone **resist** for deep-UV lithog. There have been a lot of efforts to prevent the **resist** from suffering from the deactivation of acid during the delay time between exposure and post exposure bake (PEB). The new design

of matrix resin containing amide functional group has advantages over current lithog. techniques. The effect of amide functional group as a basic additive in a **chemical amplified resist** was investigated. A new class of matrix resin containing amide functional group, poly(hydroxystyrene-tert-Bu **acrylate**-3-(tert-butoxycarbonyl)-1-vinyl-2-caprolactam), was developed. It showed 0.20μm lines/spaces patterns of this **resist** using KrF excimer stepper (NA 0.55, partial coherence factor 0.55) with a exposure dose of 25 mJ/cm2. This **resist** showed no change of pattern profile after 2 h post exposure delay in which ammonia concentration is 5 ppb.

3-(Tert-butoxycarbonyl)-1-vinyl-2-caprolactam (BCVC) unit as a basic additive can not only solve amine contamination effectively, but also improve the resolution of the **resist.** BCVC unit reduces the diffusion of acid and it results in sharp contrast at the interface between the exposed and unexposed areas. Therefore, adding BCVC unit in matrix resin leads to the stabilization of the pattern profile and higher resolution

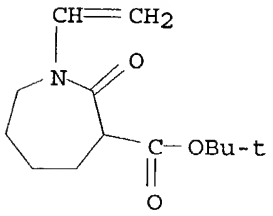
IT **194992-03-5P**, Tert-Butyl **acrylate**; p-acetoxystyrene; 3-(tert-butoxycarbonyl)-1-vinyl-2-caprolactam **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(environmentally stable **chemical amplified** pos. photoresist containing vinyllactam terpolymers)

RN 194992-03-5 CAPLUS

CN 1H-Azepine-3-carboxylic acid, 1-ethenylhexahydro-2-oxo-, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

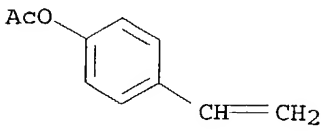
CM 1

CRN 188172-95-4
CMF C13 H21 N O3



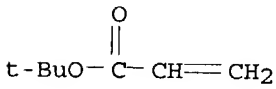
CM 2

CRN 2628-16-2
CMF C10 H10 O2



CM 3

CRN 1663-39-4
CMF C7 H12 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST lithog **chem amplified** pos photoresist terpolymer; butoxycarbonylvinylcaprolactam hydroxystyrene **acrylate** polymer photoresist

IT Positive **photoresists**
(**chemical amplified**; environmentally stable **chemical amplified** pos. **resist** containing vinyllactam terpolymers)

IT Spectra
(environmentally stable **chemical amplified** pos. photoresist containing vinyllactam terpolymers)

IT 194992-03-5DP, hydrolyzed **194992-03-5P**, Tert-Butyl **acrylate**; p-acetoxystyrene; 3-(tert-butoxycarbonyl)-1-vinyl-2-caprolactam **copolymer** 194992-04-6P
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(environmentally stable **chemical amplified** pos. photoresist containing vinyllactam terpolymers)

IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate
RL: TEM (Technical or engineered material use); USES (Uses)
(environmentally stable **chemical amplified** pos. **resist** containing vinyllactam terpolymers)

IT 188172-95-4P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(polymerization in preparation of **chemical amplified** pos. **resist** containing vinyllactam terpolymers)

IT 105-60-2, Caprolactam, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with acetylene)

IT 74-86-2, Acetylene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)

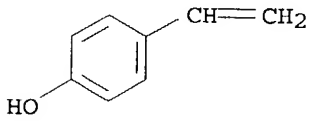
(reaction with caprolactam)
IT 2235-00-9P, N-Vinylcaprolactam
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(reaction with di-tert-butyldicarbonate)
IT 24424-99-5, Di-tert-butyldicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with vinylcaprolactam)

L26 ANSWER 56 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:471408 CAPLUS
DOCUMENT NUMBER: 127:227300
TITLE: **Chemically amplified resists** containing vinyllactam derivatives
AUTHOR(S): Kim, Jin-Baek; Jung, Min-Ho; Cheong, Jong-Ho; Kim, Jae-Young; Bok, Cheol-Kyu; Koh, Cha-Won; Baik, Ki-Ho
CORPORATE SOURCE: Dep. Advanced Materials Eng., Korea Advanced Inst. Sci. Technol., Seoul, 130-650, S. Korea
SOURCE: Journal of Photopolymer Science and Technology (1997), 10(3), 493-502
CODEN: JSTEEW; ISSN: 0914-9244
PUBLISHER: Technical Association of Photopolymers, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new environmentally stable pos. tone deep UV **resist** has been designed by incorporating basic units into a matrix polymer for stabilization toward airborne contaminants. Poly(3-(t-butoxycarbonyl)-1-vinylcaprolactam) (poly(BCVC)), and poly(3-(t-butoxycarbonyl)-1-vinylcaprolactam-co-t-Bu **acrylate**-co-hydroxystyrene) (poly(BCVC-co-TBA-co-HOST)) were prepared and evaluated as potential deep UV **photoresists.** 0.2 μM line/space patterns were obtained for these **resist** systems using a KrF excimer stepper (NA 0.55) with a dose of 25 mJ/cm2. And these **resists** did not change pattern profile after 2 h post exposure delay (PED) time in which ammonia concentration was 5 ppb. 3-(T-Butoxycabonyl)-1-vinyl-2-caprolactam (BCVC) unit as a basic moiety can not only solve the amine contamination problem effectively, but also improve the resolution of the **resists.** BCVC unit reduces the diffusion of acid and it results in sharp contrast at the interface between the exposed and unexposed areas. Therefore, adding BCVC unit in matrix polymer leads to the stabilization of the pattern profile and higher resolution
IT **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer 174476-25-6P**, p-Acetoxystyrene-tert-Butyl **acrylate copolymer 194992-03-5P**, 3-(t-Butoxycarbonyl)-1-vinylcaprolactam-tert-butyl **acrylate** -p-acetoxystyrene **copolymer 194992-04-6P**, 3-(t-Butoxycarbonyl)-1-vinylcaprolactam-tert-butyl **acrylate** -p-hydroxystyrene **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical amplified resists** containing vinyllactam derivs.)

RN 159296-87-4 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

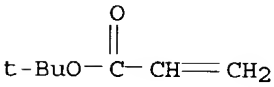
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

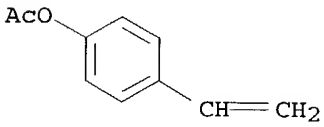
CRN 1663-39-4
CMF C7 H12 O2



RN 174476-25-6 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

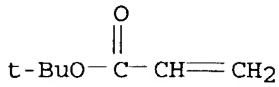
CM 1

CRN 2628-16-2
CMF C10 H10 O2



CM 2

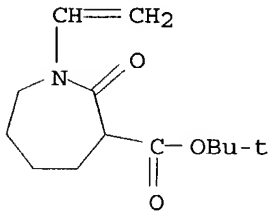
CRN 1663-39-4
CMF C7 H12 O2



RN 194992-03-5 CAPLUS
CN 1H-Azepine-3-carboxylic acid, 1-ethenylhexahydro-2-oxo-, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

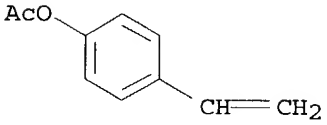
CM 1

CRN 188172-95-4
CMF C13 H21 N O3



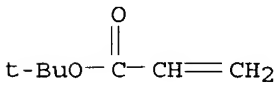
CM 2

CRN 2628-16-2
CMF C10 H10 O2



CM 3

CRN 1663-39-4
CMF C7 H12 O2



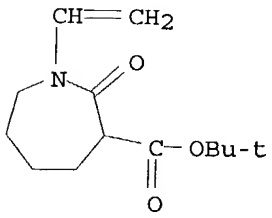
RN 194992-04-6 CAPLUS

KOROMA EIC1700

CN 1H-Azepine-3-carboxylic acid, 1-ethenylhexahydro-2-oxo-, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenol (9CI) (CA INDEX NAME)

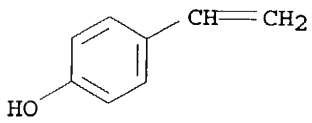
CM 1

CRN 188172-95-4
CMF C13 H21 N O3



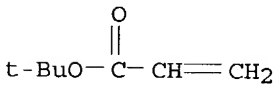
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST **chem amplified resist** photoresist
vinyllactam

IT **Photoresists**
(UV; **chemical amplified resists** containing vinyllactam derivs.)

IT Thermal analysis
(**chemical amplified resists** containing vinyllactam derivs.)
IT Polymerization
(radical; preparation of **chemical amplified resists** containing vinyllactam derivs.)
IT Photolithography
(submicron; **chemical amplified resists** containing vinyllactam derivs.)
IT **159296-87-4P**, tert-Butyl **acrylate**-p-hydroxystyrene **copolymer 174476-25-6P**, p-Acetoxystyrene-tert-Butyl **acrylate copolymer** 188172-96-5P, 3-(t-Butoxycarbonyl)-1-vinylcaprolactam homopolymer **194992-03-5P**, 3-(t-Butoxycarbonyl)-1-vinylcaprolactam-tert-butyl **acrylate**-p-acetoxystyrene **copolymer 194992-04-6P**, 3-(t-Butoxycarbonyl)-1-vinylcaprolactam-tert-butyl **acrylate**-p-hydroxystyrene **copolymer**
RL: **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(**chemical amplified resists** containing vinyllactam derivs.)
IT 109-72-8, n-Butyl lithium, uses 865-47-4, Potassium tert-butoxide
RL: CAT (Catalyst use); USES (Uses)
(preparation of **chemical amplified resists** containing vinyllactam derivs.)
IT 74-86-2, Acetylene, reactions 105-60-2, ε-Caprolactam, reactions 24424-99-5, Di-tert-butyldicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of **chemical amplified resists** containing vinyllactam derivs.)
IT 2235-00-9P, 1-Vinylcaprolactam 188172-95-4P
RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)
(preparation of **chemical amplified resists** containing vinyllactam derivs.)

L26 ANSWER 57 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:383568 CAPLUS
DOCUMENT NUMBER: 127:26084
TITLE: Radiation-sensitive resin compositions for **chemically amplified resists**
INVENTOR(S): Natsume, Norihiro; Tominaga, Tetsuo; Suzuki, Masamutsu; Isamoto, Yoshitsugu
PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 09090635	A2	19970404	JP 1995-264693	19950920

PRIORITY APPLN. INFO.: JP 1995-264693 19950920

AB Claimed articles are pos.-working compns. comprising (A) halocycloalkanesulfonates or halocycloalkenesulfonates XnZOSO2R (Z = cyclic group having (n + 1) valency and containing C3-20 cycloalkyl and/or cycloalkenyl; X = halo; R = organic group; n = 1-30) as radiation-sensitive acid-generating agents and (B) (1) alkali-insol. resins protected by acid-dissociative group to become alkali-soluble resins or (2) alkali-soluble resins and alkali-solubility controlling compds. to be decomposed by acids. Also claimed articles are neg.-working compns. comprising said acid generators, alkali-soluble resins, and compds. to crosslink the alkali-soluble resins in the presence of acids. The compns. provide high resolution, sensitivity, stable pattern formation and are suitable for semiconductor device manufacture

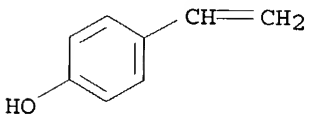
IT **159296-87-4P**, tert-Butyl **acrylate**-p-vinylphenol **copolymer 168274-87-1P**, Tert-butyl **acrylate** -p-isopropenylphenol **copolymer 182930-98-9P**, Di-tert-butyl fumarate-p-vinylphenol **copolymer**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive resin compns. containing halocycloalkanesulfonates for **chemical amplified resists** for)

RN 159296-87-4 CAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

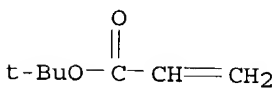
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

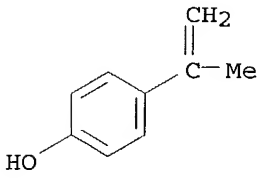
CRN 1663-39-4
CMF C7 H12 O2



RN 168274-87-1 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-(1-methylethenyl)phenol (9CI) (CA INDEX NAME)

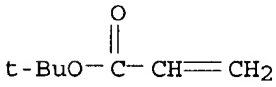
CM 1

CRN 4286-23-1
CMF C9 H10 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2

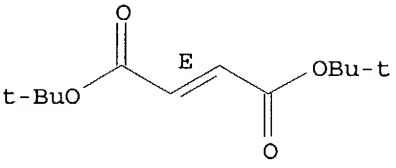


RN 182930-98-9 CAPLUS
CN 2-Butenedioic acid (2E)-, bis(1,1-dimethylethyl) ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 7633-38-7
CMF C12 H20 O4

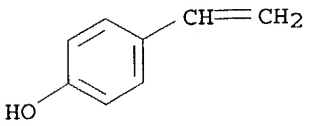
Double bond geometry as shown.



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039
ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 76

ST halocycloalkanesulfonate acid generator **chem amplified resist**; halocycloalkenesulfonate radiation sensitive acid generator **resist**

IT **Resists**
(pos.-working; radiation-sensitive resin compns. containing halocycloalkanesulfonates for **chemical amplified resists**)

IT Negative **photoresists**
(radiation-sensitive resin compns. containing halocycloalkanesulfonates for **chemical amplified resists**)

IT Semiconductor devices
(radiation-sensitive resin compns. containing halocycloalkanesulfonates for **chemical amplified resists** for)

IT 190074-24-9P 190074-25-0P 190074-26-1P 190074-27-2P
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(acid generator; radiation-sensitive resin compns. containing halocycloalkanesulfonates for **chemical amplified resists**)

IT 358-23-6, Trifluoromethanesulfonic anhydride 421-83-0, Trifluoromethanesulfonyl chloride 56207-45-5, 2,2,6,6-Tetrachlorocyclohexanol 190074-28-3 190074-29-4 190074-30-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(halocycloalkanesulfonate from; for radiation-sensitive **resist** compns.)

IT 5292-43-3DP, tert-Butyl bromoacetate, reaction products with polyhydroxyphenol 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with polyhydroxyphenol 59269-51-1DP, Polyhydroxystyrene, buthoxycarbonyl-substituted
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive resin compns. containing halocycloalkanesulfonates for **chemical amplified resists**)

IT **159296-87-4P**, tert-Butyl **acrylate**-p-vinylphenol **copolymer 168274-87-1P**, Tert-butyl **acrylate** -p-isopropenylphenol **copolymer 182930-98-9P**, Di-tert-butyl fumarate-p-vinylphenol **copolymer**

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(radiation-sensitive resin compns. containing halocycloalkanesulfonates for **chemical amplified resists** for)

L26 ANSWER 58 OF 58 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:947228 CAPLUS
DOCUMENT NUMBER: 124:57046
TITLE: Manufacture of vinylphenol **copolymers** for **chemically amplified photoresists**
INVENTOR(S): Yamachika, Mikio; Kobayashi, Hidekazu; Oota, Toshuki; Tsuji, Akira
PATENT ASSIGNEE(S): Japan Synthetic Rubber Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07233222	A2	19950905	JP 1994-255811	19941020

PRIORITY APPLN. INFO.: JP 1993-336599 19931228

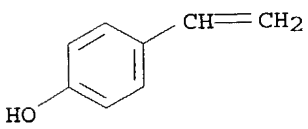
AB Title **copolymers** are manufactured in high yields and with less byproducts by radical **copolymn.** of vinylphenol (I) in the presence of ethylphenol (II). Thus, 120 g a mixture containing 20% p-I and 65% p-II was treated with tert-Bu **acrylate** 17, propylene glycol monomethyl ether 50, and IBN 1.9 g at 40° for 7 h to give 55% **copolymer** (Mw/Mn = 1.8) with 78% transparency. A photoresist composition containing the **copolymer** formed a high-resolution pattern.

IT **172335-57-8P**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(manufacture of vinylphenol **copolymers** in presence of ethylphenol for **chemical amplified photoresists**)

RN 172335-57-8 CAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenylphenol and 1(or 2)-methoxypropanol (9CI) (CA INDEX NAME)

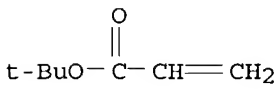
CM 1

CRN 2628-17-3
CMF C8 H8 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2

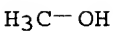


CM 3

CRN 1320-67-8
CMF C4 H10 O2
CCI IDS

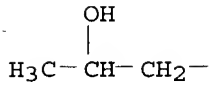
CM 4

CRN 67-56-1
CMF C H4 O



CM 5

CRN 57-55-6
CMF C3 H8 O2



IC ICM C08F212-14
ICS C08F002-44
ICA C08F220-18
CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 74
ST vinylphenol **copolymer** manuf ethylphenol; **chem amplified** photoresist vinylphenol **copolymer**
IT **Resists**
(photo-, manufacture of vinylphenol **copolymers** in presence of ethylphenol for **chemical amplified photoresists**)

KOROMA EIC1700

IT Polymerization
(radical, manufacture of vinylphenol **copolymers** in presence of ethylphenol for **chemical amplified photoresists**)

IT **172335-57-8P**
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(manufacture of vinylphenol **copolymers** in presence of ethylphenol for **chemical amplified photoresists**)

IT 123-07-9, p-Ethylphenol 25429-37-2, Ethylphenol
RL: NUU (Other use, unclassified); USES (Uses)
(manufacture of vinylphenol **copolymers** in presence of ethylphenol for **chemical amplified photoresists**)

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